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This study proposed (1) to determine qualifications and teaching loads of junior college teachers of natural and social sciences, engineering and technology; (2) to examine the courses to identify needed improvements; (3) to determine the status of the profession according to the teacher's experience and his commitment to the junior college. Although 4663 questionnaires were sent, it was found that only 3920 recipients filled all the conditions of the survey. There were 2540 usable responses. Among the findings were: (1) 85% of the teachers were men; (2) the median age was 42; (3) 91% taught full-time; (4) 15% of the full-time and 20% of the part-time teachers were women; (5) part-time teachers were slightly over the median age; (6) California and Florida had the highest ratios of teachers to population; (7) 84% taught in the public colleges. The questionnaire, technical notes, and details of the survey are shown in the appendix; e.g., age and sex by geographic region and state, enrollment size, degrees earned, teaching experience, number of courses taught by field and degree, professional affiliations, length of current appointment, administrative and research duties, current work on higher degrees, outside employment, textbook appraisal, salaries, appraisal of success, degree of satisfaction, career aims, and various other correlations. (HH)

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Survey of Science Resources Series

National Science Foundation

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Junior College Teachers of Science, Engineering, and Technology, 1967

EXPERIENCE AND EMPLOYMENT CHARACTERISTICS

UNIVERSITY OF CALIF.
LOS ANGELES
APR 14 1969
CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

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FOREWORD

JUNIOR COLLEGES are the most rapidly growing segment of the Nation's system of post-secondary education. In the past decade their enrollments have increased threefold, while enrollments in other institutions of higher education have doubled.

The junior colleges' contributions to higher education in the sciences not only are increasing but also are quite diversified. For many of the students the junior college education lays the foundation for baccalaureates, advanced degrees, and employment in one of the professions. Others receive training in vocationally oriented technological skills of immediate use upon graduation from junior college. All receive some preparation in the sciences and the scientific method that will make them a part of a more enlightened citizenry in a society increasingly based on science and technology.

This report provides information on the preparation and teaching activities of junior college teachers of science and related technological subjects. It should be useful in the planning of programs for improvement of science teaching in these institutions. The report may also dispel some frequently expressed concerns as to the quality of junior college science instruction. However, most importantly it can help focus attention on those weaknesses to which efforts for correction should be directed. Prior to this survey, one could only speculate about the magnitude of these problems in the absence of quantitative measures.

The American Association for the Advancement of Science undertook the project through its Commission on Science Education under a grant from the National Science Foundation. Dr. John R. Mayor, AAAS Director of Education, was responsible for carrying it out. In appraising the junior college situation as shown in the results of the study, he noted that:

> For the first time we have a reliable basis for some generalizations about science education in the junior colleges. By and large, this is an encouraging picture. For example, despite the almost unbelievable growth in the number of junior colleges and in the number of students that they serve, there is a surprising degree of academic strength in their faculties, and an unexpectedly large amount of activity among faculty members working toward continued improvement.

We are grateful to Dr. Mayor and to the Surveys & Research Corporation, employed by the AAAS to conduct the survey and prepare the analysis.

The study was conducted under a program of the Office of Economic and Manpower Studies, H. E. Riley, Head, in the Sponsored Surveys and Studies Section, Thomas J. Mills, Head.

CHARLES E. FALK
Planning Director
National Science Foundation

OCTOBER 1968

ACKNOWLEDGMENTS

The survey and this report were carried out under the general direction of Justin C. Lewis, Head of the Foundation's Science Education Studies Group. Primary responsibility for details of the project was shared by Jacob Fisher and Virginia Shapley in the Surveys & Research Corporation, which did the work for the American Association for the Advancement of Science.

CONTENTS

Page

SUMMARY OF FINDINGS vii

I. INTRODUCTION 1
- Purpose and Method 2
- General Characteristics 3

II. EDUCATION AND EXPERIENCE 5
- Highest Earned Degree 5
- Training and Experience in Field of Teaching 7
- Participants in Institutes, Traineeships, and Fellowships 8
- Work Experience 8

III. WORKLOAD AND COURSE STATUS 11
- Work Week 11
- Time Spent in Connection With Junior College Position 12
- Time Spent in Professional Activities Not Connected With Junior College Position 13
- Number of Courses Taught 15
- Teachers in One Discipline and More Than One Discipline 16
- Number of Students Per Class 16
- Transfer Credit Status of Courses 17
- Appraisal of Texts Used in Courses 17

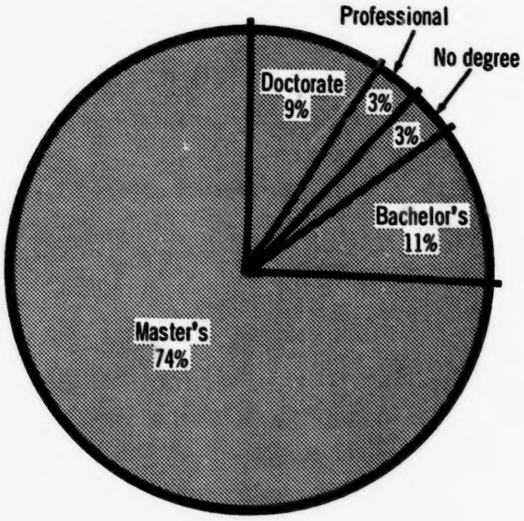
IV. JUNIOR COLLEGE SALARIES 19
- Regional and State Differences 19
- Differences by Highest Degree Held 19
- Other Earnings 20

V. TEACHER ATTITUDES 21
- Appraisal of Success in Teaching 21
- Career Aims 21
- Satisfaction With Teaching as a Career 22

APPENDICES:
- A. Statistical Tables 26
- B. Technical Notes 65
- C. Survey Questionnaire 75

Summary of Findings

- This survey shows that most junior college teachers of science, engineering, and technology held a master's degree.



- Three-fifths of the holders of doctorates had 10 or more years of teaching experience. A little less than one-half of the holders of the master's degree and one-fourth of the teachers with only a bachelor's degree had as much as 10 years of experience. The ratio with less than 5 years of experience was lowest among doctorate-holders; highest among teachers with the lowest educational levels.

- The teachers of 16 percent of the courses indicated that they had been admitted to candidacy for the doctorate. The teachers of more than two-thirds of the courses had taken some additional study beyond their earned degrees.

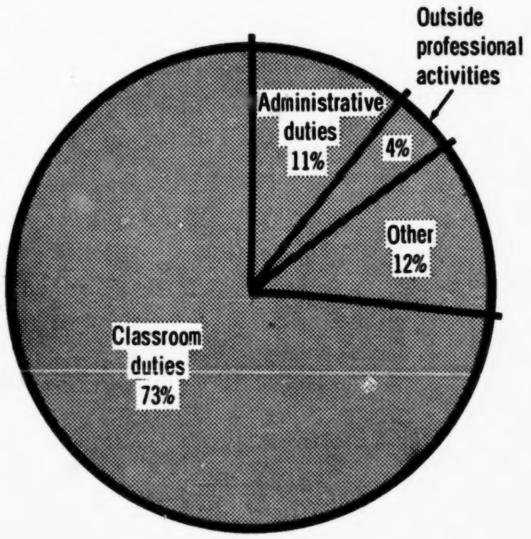
- Teachers with over 5 years of teaching experience in their field taught 59 percent of all the courses.

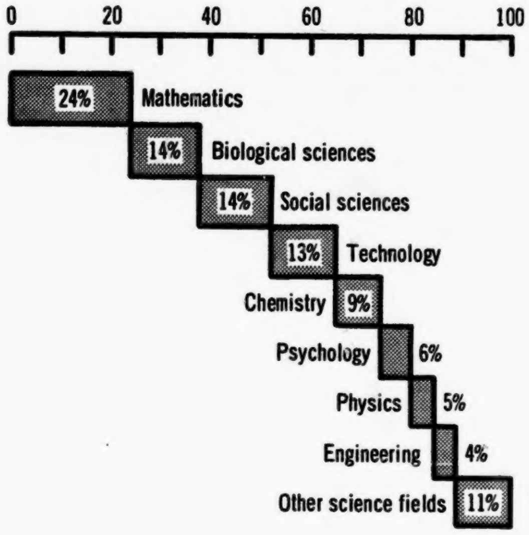
- Three-fourths of the teachers had participated in an institute or held a fellowship or traineeship since 1960. Most of these were sponsored by the National Science Foundation.

- The full-time teachers of more than one-half of the courses reported that their work experience going 12 years back consisted of teaching only; for an additional 14 percent the teachers had experience also in research.

- Of the total courses, 16 percent were taught by teachers who had been appointed to their current teaching assignments in 1955 or earlier, 44 percent by teachers who had never taught anywhere else, and 67 percent by teachers who had begun their teaching careers after 1955. The teachers of 27 percent of the courses had come from high school teaching jobs, 16 percent from other junior colleges, and 4 percent from 4-year colleges. The remainder reported other teaching levels, such as elementary schools, and jobs other than teaching.

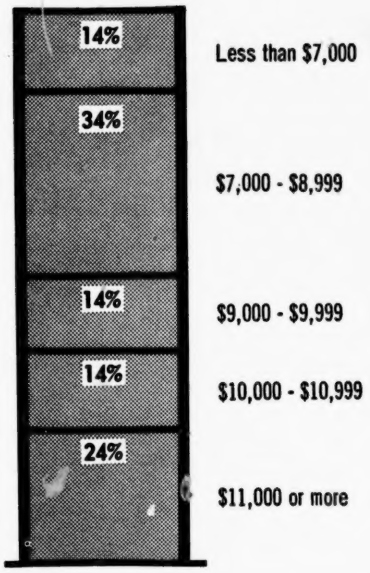
- Almost three-fourths of a typical junior college science teacher's work week in connection with his position was spent in classroom duties. Administrative tasks and other activities, such as research and background reading, accounted for the rest of his time on the junior college job. Activities not connected with his position at the college claimed only 4 percent of his total professional time.





- The field with the most courses was mathematics, with one-fourth of the total.

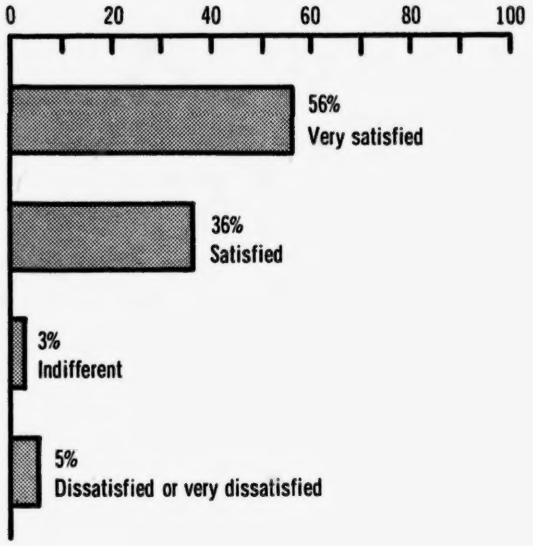
- In May 1967, just over one-half of the full-time teachers were earning $9,000 or more a year in their junior-college jobs. Those shown here with less than $7,000 included 5 percent with less than $6,000. Presumably, the higher paid teachers included department heads and others whose salary reflected administrative responsibilities as well as their teaching assignments.



- The teachers of 61 percent of the courses regarded themselves as "quite successful" teachers; 37 percent, "moderately successful"; and only 2 percent, "barely adequate."

- The teachers of 62 percent of the courses reported that they hoped to stay in teaching or combine a teaching and research career. The other 38 percent indicated an interest in administration, research only, or some other non-teaching activity.

- Although inadequate salary was a major cause for dissatisfaction, the teachers of 92 percent of the courses reported themselves as either "satisfied" or "very satisfied" with teaching as a career. Only 4 percent said they were dissatisfied; 1 percent, "very dissatisfied."



I. Introduction

THE SHARP INCREASE IN recent years in junior college enrollments underscores the importance of current information on the qualifications and teaching loads of junior college teachers in the sciences, engineering, and technology.

From 1963 to 1967, the enrollments nearly doubled while the number of junior colleges increased by less than one-third, according to the American Association of Junior Colleges (AAJC),[1] as follows:

Year	*Colleges*	*Enrollments* (in millions)
1963	694	0.9
1965	771	1.1
1966	838	1.5
1967	912	1.7

Looking ahead, the executive director of AAJC recently noted his expectation of more than 1,000 publicly supported community colleges and a need for 100,000 additional teachers by the late seventies.[2] What kinds of teachers will be needed and with what qualifications? This study lays groundwork for an answer by examining the teachers of science, engineering, and technology in junior colleges in May 1967.

Some reasons for interest in the subject are the differences in some of the objectives of 4-year colleges and junior colleges and the consequences of those differences on qualifications and workloads of the teaching staffs. The junior colleges have been described as the "gray area" in higher education, offering to a great many students some education beyond high school but short of the baccalaureate level. In the public "community" junior colleges, with their "open door" policy of admissions, the entrants come from more widely varied backgrounds than do the students admitted to 4-year colleges. The curricula offer the counterparts of the lower division courses of the 4-year college as well as hundreds of courses in technical and vocational fields not ordinarily found in other institutions of higher education. Many of the students are preparing to go on for degrees in universities and 4-year colleges.

Gleazer, of AAJC, in estimating that about one-third of the students enrolling in junior colleges transfer to 4-year institutions, noted that the baccalaureate degree is not an "appropriate objective" for many students.[3]

Since the junior colleges do not themselves aim to confer the baccalaureate degree, there is no general agreement that qualification standards for their teachers should be the same as those for 4-year colleges. With position on the degree ladder taken as the traditional basis for judging qualifications of a teacher, a recent report by the Commission on College Physics said that "every teacher of a college course in physics should have earned at least the M.S. degree in physics. . . . every teacher of physics majors at a school offering the baccalaureate degree should hold the Ph.D. in physics."[4] This would seem to imply that teachers of physics in junior colleges need not possess the doctoral degree as a qualification for teaching the subject, but the prevailing view in most fields is that the best-qualified teacher is the one who holds a doctorate.

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[1] *1964 Junior College Directory* and subsequent years. Washington, D.C.: American Association of Junior Colleges, 1964 through 1967.

[2] Edmund J. Gleazer, Jr., "Preparation of Junior College Teachers," *Educational Record* 48:2, Spring 1967.

[3] *Ibid.* Based on Medsker's studies (L. L. Medsker, *The Junior College: Progress and Prospect.* New York: McGraw-Hill Book Co. Inc., 1960, and a later study soon to be published). These studies found that two-thirds of junior college students plan to go on to 4-year colleges but only one-third actually do transfer.

[4] A. A. Strassenburg, "Study Programs for College Physics Teachers—An Analysis of Supply and Demand," *American Journal of Physics* 32:6, June 1964, p. 436.

Some educators question the doctoral degree as a relevant criterion for junior college teachers. They ask if views on qualifications for teaching should not be overhauled to meet the demand for effective college-level teaching of students who are not oriented toward research in the liberal arts or in science and technology.[5] The large community colleges, where much of the growth in junior colleges is taking place, are educating students who have diverse career aims. Although many plan to transfer to 4-year colleges, others are not sufficiently motivated to do so or are unclear in their goals. Still others plan to take vocational education or terminal-occupational programs. In this setting, some educators believe, the teaching capability of the teacher would seem to be a more important asset than his research output. The issue unquestionably merits further study.

This report provides data on the educational backgrounds of an estimated 11,000 junior college teachers of science, engineering, and technology in the 1966–67 academic year, as well as information on work experience, workload, salary, other earnings, career goals, and satisfaction with teaching.

Purpose and Method

The objectives of the study were—

- To determine the qualifications and teaching loads of junior college teachers in the natural and social sciences, engineering, and technology.
- To determine information about the courses taught, so as to identify areas wherein improvements in teacher qualifications and teaching burden are needed.
- To identify the status of this manpower in junior colleges, particularly with respect to origins and previous experiences and to commitments to remain in junior college teaching.

Details of the survey and other technical notes, as well as the questionnaire, are shown in the appendix.

The survey used questionnaires mailed to a representative sample of junior college science teachers, drawn from a roster of 14,200 teachers in the sciences, engineering, and technology compiled by the American Association of Junior Colleges (AAJC) in 1966. The AAJC described the roster as containing most of the teachers of science, including social sciences and technology, in the country's 2-year colleges. It listed teachers who were active during the 1965–66 academic year in the 692 junior colleges that had cooperated in the development of the roster (see appendix table B–1). Teachers were identified on the roster by 13 separate fields of teaching and a residual group consisting of teachers in other fields, heads of departments, and those with no report of field. Appendix table B–2 shows numbers of teachers on this roster by field of teaching, those also teaching in one or more other fields, and those in full-time or part-time status.

Sample Design for Survey

The sample for the general mailout was designed to yield a representative group of teachers in each of the 13 teaching fields selected for inclusion in the study, with a minimum of 150 and a maximum of 450 teachers in each field, and a sample from an "other" group. The sampling ratios were based on numbers of teachers in the fields—large ratios for fields with relatively few teachers, smaller for fields with more teachers. The procedure resulted in a 4,663-name sample, or about one-third of the total number on the AAJC roster. (See appendix B for a detailed description.)

Questionnaire Mailout and Response

The questionnaire was mailed in May 1967 to the 4,663-name sample from the roster, and followup letters were sent to nonrespondents. By September 30, the cutoff date for the study, questionnaires had been received from 2,540 individuals, or 54 percent of the number on the mailing list. However, analysis indicates that there were several ameliorating circumstances—many were no longer teaching in a junior college or in the fields surveyed, had died, or had not been properly a member of the roster.

Determination of the actual response rate is based on the faculty members in the selected fields who taught these subjects in both 1965–66 and 1966–67. The data and followup studies indicate that 16 percent of the names on the mailing list were individuals who were not teaching in junior colleges in 1967. Thus, the within-scope sample total becomes approximately 3,920, and the 2,540 returned questionnaires represent a "response rate" of about 65 percent. This also suggests that 16 percent of the 14,000 names on the 1966 AAJC roster were individuals who did not fall in the 1967 survey universe.

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[5] Mary Wortham, "The Case for a Doctor of Arts Degree," *AAUP Bulletin*, Winter 1967, pp. 372–377.

The timing of the survey in the last month of the academic year, when faculty members are pressed to clear their desks before leaving for vacations or summer sessions, undoubtedly also affected this response rate.

Data Shown in Report

The data shown in this report are estimated totals based on sample numbers and are therefore subject to sampling error. In general, the smaller the figure the larger the error. Each figure represents the result of applying to the sample number an appropriate inflation factor based on the sampling ratio. The total numbers—for example, courses taught or number of teachers—will vary approximately plus or minus 50, because of the rounding process. The inflation factors used and the method of estimation are described in the appendix, which also presents values for the standard error of the estimate.

General Characteristics

The number of junior college teachers of science, engineering, and technology who were teaching in both 1965–66 and 1966–67 is estimated from the survey to have been almost 11,000. This section presents estimated data on their age and sex, control and enrollment of the institutions in which they taught, and their geographic distributions by region and State.

Age and Sex

Of the estimated number of science, engineering, and technology teachers in junior colleges, 85 percent were men. Among four broad geographic regions, women ranged from 22 percent in the North Atlantic States to 11 percent in the West and Southwest. The teachers were predominantly middle-aged, with a median age of 42 years. One in eight was under 30 years; one in 14 was 60 years or over. The women tended to be slightly older than the men. (See appendix table A–1.)

Full-Time and Part-Time Teachers

Most of the junior college teachers (91 percent) were teaching full time. Women constituted 15 percent of the full-time teachers (20 percent of the part-time). Part-time teachers tended to be slightly older. (See appendix tables A–2 and A–3.)

Distribution by Region and State

Differences in distributions of the teachers among the States (shown in appendix table A–1) reflect both population disparities and variations in the ways the junior college systems were developed. California institutions, for example, employed 24 percent of the teachers in the survey, but the State accounts for 10 percent of the U.S. population. The disparity reflects the extraordinary growth since World War II of the community college system in that State.

Also high in teacher ratios was Florida, with three-eighths of the Southeast region teachers in the survey. Some of the other States in that region accounted for much lower proportions of the teachers than of the population generally. A similar low ratio of teachers to population emerges from the data for most of the New England States.

Public and Private Junior Colleges

Public institutions employed 86 percent of the teachers in the survey (appendix table A–4), nearly the same as the 84 percent shown for "instructional and administrative faculty" in the *1967 Directory* of the American Association of Junior Colleges.

The absence of data from six States and the District of Columbia for the public junior college teachers and from nine States for private junior college teachers was due to the lack of such colleges in most of the States affected and to uneven response rates.[6]

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[6] *1967 Junior College Directory, op. cit.*, reports no public junior colleges in four of these States and the District of Columbia, and no private junior colleges in eight States. This means that two States having few teachers in public junior colleges did not show up in the responses and, similarly, one State having one private junior college had no teachers responding.

Enrollment Size

Most of the teachers covered in the survey taught in public junior colleges, which tend to be larger than the private colleges. Almost one-half of the teachers reported that their institutions had enrollments of 2,500 or more. An additional one-fourth were at colleges with from 1,000 to 2,500 students. A little more than one-fourth taught in colleges with fewer than 1,000 students. (See appendix table A-4.)

The median enrollment size of the private colleges for these teachers was a little over 600 students; the public college counterpart, 2,600 to 2,700 students.

II. Education and Experience

THIS STUDY examines five aspects of the educational backgrounds and work experience of these junior college teachers of science, engineering, and technology. They are, in the order discussed: academic degrees and additional study, training and experience in field of teaching, fellowships or traineeships held, and various work experiences.

Highest Earned Degree

In educational attainment, these junior college teachers held a position roughly between secondary school teachers and teachers in 4-year colleges and universities. In this study, three-fourths of the science, engineering, and technology teachers held a master's degree as their highest (appendix table A–5). In secondary schools, two-thirds of the teachers in 1965–66 held a bachelor's as their highest degree,[1] and in universities and 4-year colleges, one-half held the doctorate.[2] The distributions found in this survey of junior colleges are shown at the right with those from a 1960 study.[3] Disparities—particularly in the percentages shown for master's, bachelor's, and no degree—reflect in part the differences in fields covered; in part, changes over a period of years.

Medsker, 1960 (all fields)	*Percent*
Total	100
"Doctorate" (presumably Ph.D. and some professional degrees)	10
Master's	65
Bachelor's	17
No degree	7
Indeterminant	2

This survey, 1967 (science engineering, and technology teachers) (from appendix table A-5)	*Percent*
Total	100
Doctorate	9
Professional degree (M.D., L.L.B., E.E., etc.)	3
Master's	74
Bachelor's	11
No baccalaureate degree	3
Indeterminant	[a]

[a] Less than 0.5 percent.

Highest Degree and Size and Type of School

Degree patterns varied somewhat between public and private junior colleges. Doctorates were slightly more frequent in the private than in the public colleges—11 and 9 percent, respectively. But the master's degree was held by a higher proportion of teachers in the public colleges (75 percent) than in private schools (69 percent); for the bachelor's degree, higher in private colleges (14 percent) than in public colleges (10 percent). (See appendix table A–5.)

Because public junior colleges tend to have large enrollments, a little over one-half of the teachers in the public institutions were in schools with enrollments of 2,500 or more. By contrast, three of four teachers in private junior colleges were in institutions with fewer than 1,000 students. (See appendix table A–4.) Differences by size of enrollment in the distribution of teachers by highest degree held were not large.

Highest Degree and Years of Teaching Experience

As teachers gain in years of experience their educational qualifications seem to advance (appendix table A–6). This suggests that teachers some years back may have come to their positions with better educational qualifications than more recently appointed teachers or that junior colleges may not be able to compete with the 4-year universities and colleges for the better qualified new teachers. Another proposition is that many teachers continue their post-graduate education after entering on their teaching careers. Doctorate-holders were a higher proportion (12 percent) in the group of teachers reporting 10 or more years of teaching experience than in the less experienced groups. This more experienced group also accounted for the highest proportion holding a master's degree—78 percent—compared with 67 percent in the 1- to 2-year group. Further evidence is shown in the data on teachers who held the bachelor's as their highest degree. From 18 to 19 percent of the teachers with fewer than 5 years of experience reported the bachelor's degree only, as did 10 percent of the teachers with 5 to 9 years of experience and 5 percent of those with 10 or more years.

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[1] *American Public School Teacher, 1965–66.* Washington, D.C.: Research Division, National Education Association, 1967, p. 71.

[2] U.S. Department of Health, Education, and Welfare, Office of Education, *Teaching Faculty in Universities and Four-Year Colleges, Spring 1963,* OE–53022–63. Washington, D.C. 20402: Supt. of Documents, U.S. Government Printing Office, 1966.

[3] L. L. Medsker, *The Junior College: Progress and Prospect,* Carnegie Series in American Education. New York: McGraw-Hill Book Co., Inc., 1960; includes administrators, 6 percent of total.

Of the teachers with a doctorate, 58 percent had 10 or more years of experience; with a master's as highest, 46 percent had 10 or more years.

Highest Degree and Field of Course Taught

Data in this and succeeding sections are presented in terms of number of courses taught in the various fields, rather than number of teachers, because fields taught are more significant in analytical relationships pertaining to such factors as hours spent in classroom teaching, level of course taught, transfer credit status, appraisal of success in teaching course, years of experience in teaching in field, and credits earned by teacher in field. They also are more closely related to numbers of students. Numbers of courses taught are also discussed extensively in connection with the teachers' workloads, on page 15.

Information was obtained on the highest degrees earned by the estimated 11,000 teachers and the 25,000 courses that they taught.[4] Most of the courses in almost all fields were taught by teachers who reported master's degrees as their highest—in seven of the 18 separately identified fields, over 80 percent. These included the broad field of social sciences with 3,400 courses. The range for the master's level was from 45 percent of the courses in technology to 85 percent in anthropology. Among doctorate-holders, the highest proportion was teaching psychology courses (26 percent); earth sciences and general science were next, each with 19 percent. Above-average ratios of teachers with a bachelor's degree only were reported for courses in technology, agriculture, engineering, the health fields, and mathematics.[5] (See appendix table A–7.)

Data presented later in this report indicate that technology, the field with the lowest percentage of teachers holding a master's degree, had the highest percentage working for a bachelor's or advanced degree (appendix table A–18b).

Additional Study Beyond Degrees Earned

Data on degree levels need to be supplemented by data on study beyond the highest degree held. The questionnaire requested teachers to report additional study that they had undertaken beyond their earned degrees and whether they had been admitted to candidacy for the doctorate in the course of such study. The results show substantial effort to advance educationally. More than two-thirds of the courses were taught by teachers who reported having taken additional study beyond their earned degrees. By individual fields of teaching, anthropology was highest, with the teachers of 85 percent of the courses reporting additional study. The lowest percentage in any single field was in technology, in which only 57 percent of the courses were taught by teachers who had already earned additional credits. (See appendix table A–8.)

Among courses taught by teachers with additional study, one in six had teachers who reported that they had been admitted to candidacy for the doctorate. Of this category, 25 percent were in the field of mathematics; 15 and 14 percent respectively were in social sciences and biological sciences.

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[4] Respondents were asked to combine sections of a course in the fields shown when reporting number of courses taught; e.g., a teacher giving two sections in chemistry and one in physics reported two courses—one in chemistry and one in physics. The data on number of *courses* taught thus understate the number of *classes* taught.

[5] A recent study for the same year showed that 53 percent of faculty in mathematical sciences in 4-year colleges and universities and 4 percent of the junior college faculty in this field held a doctorate. See J. Jewett and C. B. Linquist, *Aspects of Undergraduate Training in the Mathematical Sciences*, vol. 1. Washington, D.C.: Conference Board of the Mathematical Sciences, 1967.

The smallest proportion of courses taught by doctoral candidates in any field was 5 percent in general physical sciences; the highest was 36 percent in education. This high percentage in education is reflected also in data on number of credits earned beyond the highest degree, with courses in this field also showing the highest percentage of teachers who had earned 40 or more credits beyond degrees earned.

Advanced Study While Teaching

Among the teachers' activities outside of junior college assignments (reported in chapter III) is time spent "working toward a bachelor's or advanced degree." The teachers of 20 percent of the courses reported some time spent for this purpose (appendix table A–18b). By individual field, the highest proportion was the 32 percent of all technology courses that were taught by teachers who were working toward a new degree. As noted, technology was the field with the greatest proportion of courses with teachers reporting a bachelor's as the highest degree, the highest proportion with less than the bachelor's degree, and fewest with additional credits already earned.

Most of the teachers who were taking additional academic courses were spending 5 to 9 hours per week in this activity. The five fields in which teachers reported greatest concentration in this timespan were biological sciences, mathematics, physics, social sciences, and technology. For courses in six other separately identified fields, teachers tended to spend less than 5 hours per week on this activity—agriculture, engineering, health fields, general physical sciences, chemistry, and psychology. (See appendix table A–18b.)

Training and Experience in Field of Teaching

For every course taught, teachers were asked to give the number of undergraduate and graduate credits (semester hours) earned in the same field, broadly defined.[6]

For almost half the courses, teachers reported 21–40 undergraduate credits in the field. Almost one-fourth had 1–20 credits, and over one-fourth held more than 40 credits. Dispersion by number of graduate credits was somewhat more even than that of undergraduate: one-third of the courses were given by teachers with 21–40 graduate credits in the field, almost one-third by those with 1–20 graduate credits, and just over one-fourth by those with 40 credits or more. An additional 10 percent reported no graduate credits in the field in which they were teaching. (See appendix table A–9.)

Undergraduate Credits

Among separate fields taught, differences in the numbers of undergraduate credits held are striking (appendix table A–9).

Teachers reporting over 40 undergraduate credits in the same fields in which they were teaching accounted for 28 percent of the courses, for fewer than one-half in every field, and for fewer than 10 percent in two—anthropology and education. Above-average ratios (31–47 percent) for undergraduate credits of 40 hours or more were reported by respondents giving courses in agriculture, biological sciences, engineering, health fields, general physical sciences, chemistry, earth sciences, "other physical sciences," general science, and technology.

Particularly high concentrations in the middle group (21–40 hours, the range most frequently reported) were reported by respondents for courses in education, mathematics, and chemistry.

In the 1–20-credit class, relatively high ratios were shown in agriculture, anthropology, education, engineering, physics, "other physical sciences," psychology, general science, and technology.

Although few teachers (3 percent of the courses) reported no undergraduate credits in the field of their teaching, no such credits were reported by the teachers of 19 percent of the courses in anthropology and 10 percent of those in health fields, "other physical sciences," and technology. Some explanations include the relative infrequency of undergraduate courses in the subject, the possibility that a teacher qualified to teach the subject on the basis of his graduate work, and the subject combinations found in a number of junior colleges—e.g., the same individual teaching sociology and anthropology. In the latter example, the teacher perhaps majored in sociology as an undergraduate and took courses in anthropology only as a graduate student.

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[6] Respondents were asked to include number of credits in the broader field. For example, they were to include credits in engineering rather than in an engineering specialty, such as chemical engineering. For this purpose, however, chemistry, earth sciences, and physics, among "physical sciences," were also considered broad fields.

Graduate Credits

Of the courses reported, 27 percent were taught by teachers who had over 40 graduate credits in their fields of teaching (appendix table A–9). This ratio ranged from 52 percent in psychology and 42 percent in the biological sciences to 5 percent in technology. In the largest group, teachers with 21–40 graduate credits in their teaching field taught 33 percent of the courses. The ratio was higher in six fields—biological sciences, education, mathematics, chemistry, physics, and social sciences—and lowest in "other physical sciences," with 10 percent. Also low were engineering, with 18 percent, and technology, with 14 percent of the courses taught by teachers in the 21–40 credit range.

Teachers with 1–20 graduate credits in the field taught 30 percent of the courses. Highest were agriculture and "other physical sciences," with 57 percent and 51 percent respectively taught by teachers in this range. Psychology and education, by contrast, were low with 15 percent and 17 percent.

Teachers reporting no graduate credits in their fields of teaching accounted for 10 percent of all the courses. Two fields in this "zero" class, engineering and technology, had the highest number of courses given by teachers with no graduate education.

Years of Teaching Experience and Academic Credits

Teachers with over 5 years of teaching experience, in the field of the course, taught 59 percent of all the courses. Data on the number of undergraduate credits show little difference when separated by years of experience—1–2 years, 3–5 years, and over 5 years of teaching in the field. (See appendix table A–10.)

In graduate credits, however, the relationship between years of experience and number of credits seems to show that teachers gain academic achievement in the course of time. The smallest proportion of teachers with no graduate credits in the field taught was for courses taught by teachers with more than 5 years of experience, largest for courses taught by the group with 1–2 years of experience.

Credits in field of teaching apparently show uncertain relationships to a teacher's self-appraisal of success in teaching, as pointed out in chapter V.

Participants in Institutes, Traineeships, and Fellowships

As pointed out earlier, teachers tend to gain in educational qualifications as the number of years of their experience increases. Reflecting the fairly common pattern of continuing study shown in this relationship are the data on institutes, traineeships, and fellowships reported by junior college teachers for the period 1960–67. Over three-fourths had been in at least one such program. And of those who had participated, three-fourths had been involved in at least one National Science Foundation institute, fellowship, or traineeship program. (See appendix table A–11.) Two of three teachers who were NSF participants took their training during the summer months.

In addition to the NSF programs, many teachers held Government fellowships under the National Defense Education Act. Also, one-sixth of the teachers held fellowships awarded by private nonprofit foundations.

Many of the teachers participated more than once. Each academic year and summer institute attended and each fellowship or traineeship held by a teacher was counted. The NSF sponsored almost 10,000 of the 12,300 training episodes estimated to have been provided junior college teachers through institutes, traineeships, or fellowships during 1960–67 in the sciences, engineering, and technology.

Work Experience

Respondents were asked to list their employment history since 1955. To judge from the responses, most full-time teachers of science, engineering, or technology in junior colleges are what might be termed career teachers. Since only those teaching in junior colleges are covered by the study and current employment is included in experience, all of the respondents reported teaching experience in a junior college. A little over half reported employment in teaching only. One in seven reported having worked in a research job for at least part of the period since 1955,[7] and one in three had had other employment in addition to teaching (appendix table A–12).

Mathematics was the field with the highest proportion (68 percent) of courses taught by teachers who had no other type of work experience during the period 1955–67. Teachers of chemistry and biological sciences also reported relatively high proportions with a "teaching-only" employment history. Among the major fields with an above-average ratio of courses with teachers reporting some full-time previous employment in research or in other non-teaching jobs were psychology (69 percent), technology (62 percent), engineering (60 percent), physics (52 percent), and earth sciences (52 percent).

Time in Current Teaching Assignment

To obtain some measure of the mobility of junior college teachers, as well as the extent of movement into junior college teaching in recent years, respondents were asked to give the number of years they had held their current post (May 1967).

The data indicate that most of the courses were taught by teachers who had been employed in their jobs 5 years or less and that, of these, approximately one-half were taught by teachers who had been there 3 to 5 years. This finding is consistent with data from other sources on the rapid growth in recent years of junior college enrollment and the related expansion in junior college teaching staff.

Differences in the relative number of "new" and "old" teachers by field of the courses taught cannot be related to any consistent pattern. Above-average numbers of courses with teachers 6 or more years in their jobs were reported in agriculture, education, engineering, and physics; the contrary was true of psychology, the social sciences, and the general physical sciences (appendix table A–13). It cannot be demonstrated from the data that the influx of new teachers was heavier in the natural sciences than in other fields, a statement sometimes encountered.

Previous Teaching Assignment

The heavy influx of recently trained teachers into the junior colleges is evident also in the large proportion of courses taught by teachers reporting no previous teaching experience. For 44 percent of the courses, the teachers in May 1967 were on their first teaching assignment, although the number of years there is not indicated. Only one in four courses were taught by teachers who had come from teaching assignments in high school, one in six at another junior college, and one in 25 at a 4-year college.[8] (See appendix table A–14.)

The position held in May 1967 was the first teaching job for the teachers of one-half or more of the courses in agriculture, engineering, "other physical sciences," psychology, and technology. The proportion was one-third, however, in the biological sciences, in which a relatively large number of courses were taught by previous teachers of the subject in high school. The numbers taught by former high school teachers were relatively high also in mathematics and chemistry. These three fields of biology, mathematics, and chemistry—standard subjects in the high-school curriculum—understandably drew more teachers with an earlier high-school teaching experience than did courses such as engineering, earth sciences, and psychology—subjects less frequently taught in secondary schools.

Academic Level of Students Taught

By the nature of the sampling frame used in the survey all teachers necessarily reported teaching experience at the junior college. More than one-half reported having taught freshmen only, sophomores only, or a combination of the two. One in four reported a combination of teaching at high school and junior college levels, and one in five had other combinations. (See appendix table A–15.) Few significant differences in these respects could be observed between full-time and part-time teachers.

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[7] No definition of research was provided the respondents.

[8] A study of new full-time junior college teachers covering 1963–64 and 1964–65 reported that, of 7,078 newly hired teachers in 547 junior colleges, 30 percent came from high school teaching, 17 percent from university or college teaching, 24 percent from graduate schools, 11 percent from business occupations, 4 percent from a just-earned bachelor's degree, 1 percent from elementary school teaching, and the remaining 12 percent from occupations such as government, homemaking, or administration. *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1963–64 and 1964–65*, Research Report 1965–R4, Higher Education Series. Washington, D.C.: Research Division, National Education Association, April 1965.

Total Years of Teaching Experience

It would be erroneous to conclude that the bulk of the junior college teachers of science, engineering, and technology are recent recruits to the teaching profession, although not necessarily in these fields or at college level. In May 1967, seven of 10 courses were taught by those reporting teaching experience of 6 years or more, including 33 percent with 12 years or more. (See appendix table A–16.)

Courses in the natural sciences, by and large, tended to show the highest ratios of teachers with long experience. Relatively high ratios of more recent entrants into teaching were displayed in engineering, technology, psychology, and social science courses. The reasons for these differences, possibly related to different rates at which junior college departments have been expanding, were not explored in this study.

III. Workload and Course Status

THIS CHAPTER deals with distribution of the teachers' time among professional activities, along with the transfer credit status of the courses taught and the teachers' appraisals of textbooks they used in their courses.

The teachers were asked how many hours per week they spent on teaching and other classroom duties, administrative duties, research, and other activities (such as "background reading," supervision of student clubs, seminars, etc.) connected with a teacher's position at the junior college. They were also asked how much time they spent on professional activities not connected with the junior college, such as in teaching or research at another educational institution; salaried employment in industry, government, or nonprofit organization; self-employment; or work toward a bachelor's or higher degree.

Data are presented finally on number of courses taught, number of students per class, and number of teachers who taught in one field only and in more than one field.

Work Week

Detailed statistics on the two kinds of professional activities—hours per week that junior college teachers of science spent in the junior college position and outside the college—are presented in two series of tables, appendix tables A–17a to A–17d and A–18a to A–18f. The data are shown in terms of the number of courses taught, as explained on page 6.

Within the college position, the "median" teacher of these courses distributed his working hours at the college roughly in the pattern shown upper right.

Although respondents were free to give a broad interpretation to the term "research" in their responses, returns showed that not very much recognition is given to this aspect of the junior college teacher's professional life.

Activity in the junior college	*Percent of courses taught by full-time teachers reporting specified activity*	*Median hours per week in activity*
Classroom duties	100	30–39
Administrative duties	92	Less than 5
Research	18	Less than 5
Other activities	59	5–9

For "outside" activities, 90 percent of the courses were taught by teachers who reported spending 1 hour or more per week on professional activities not connected with the junior college (appendix table A–18a to A–18f). The greatest number—accounting for half the courses taught—devoted less than 5 hours per week to such activities. Patterns for the more significant of the activities reported were as follows:

Activity outside the junior college	*Percent of courses taught by full-time teachers reporting specified activity*	*Median hours per week in activity*
Total in these activities	90	Less than 5
Working toward a bachelor's or advanced degree	20	5–9
Salaried employment or self-employment	24	5–9
Research at another educational institution	3	Less than 5
Teaching at another educational institution	11	5–9
Other activities [a]	32	Less than 5

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[a] Includes professional meetings, educational associations, etc.

Time Spent in Connection With Junior College Position

The teachers' activities in the junior college are classified here in four categories: (1) classroom duties, defined as teaching, laboratory or shop (including preparation time), and related duties such as student contact time, preparing class material, correcting papers, and grading students; (2) administrative duties, defined as departmental administrative work, recordkeeping, preparing reports, attending faculty meetings, doing committee work, coaching athletics, etc.; (3) performance and administration of research projects; and (4) other junior college activities, such as "background reading," seminars, supervision of student clubs, etc.

It should be noted that teachers reported time spent for these activities as of May 1967, and the data may not be typical of the academic year as a whole. A summary of the findings is shown in table 1.

Classroom Duties

Classroom duties were broadly defined and intended to measure the time that a faculty member spent in teaching, as distinct from other duties in the college. Some teachers included in their classroom duties the time spent in "curriculum review."

The median, as noted, falls into the 30–39-hour range, but one in five of the courses were taught by teachers who reported fewer than 30 hours and 45 percent were taught by those who reported 40 hours or more. Above-average numbers of hours were reported by teachers of courses in agriculture, anthropology, and the social sciences. Relatively few hours in classroom duties, on the other hand, were shown for teachers in "other physical sciences" (which included subfields such as metallurgy and astronomy), education, and psychology. (See appendix table A–17a.)

Administrative Duties

Almost all teachers reported some time spent on administrative duties, but such activities typically accounted for fewer than 5 hours a week. One in 14 of the courses were taught by teachers who reported 20 or more hours a week spent in administrative duties, presumably including teachers who served as deans or department heads and classified their time spent in these activities under administrative duties. In only two fields did a significant proportion of teachers deviate from the general pattern. In education, almost one in three courses (in "other physical sciences," one in six) were taught by teachers who reported 20 or more hours per week devoted to administrative duties. (See appendix table A–17b.)

Research

Less than one-fifth of the courses were taught by teachers who reported research as a measurable activity.[1]

Among these courses, only one in six were taught by teachers who spent 10 or more hours a week in research. The majority reported less than 5 hours a week. Among fields, psychology courses, with 31 percent, had the highest proportion of teachers reporting themselves as engaged in research.[2] Above-average ratios

TABLE 1. *Full-time teachers' time spent in junior college activities, by type of activity, 1966–67*

Activity	Percent of courses, teachers reporting specified activity	Percent in activity, by teachers' hours per week					
		Less than 5	5–9	10–19	20–29	30–39	40 or over
Classroom duties	100	[a]	[a]	6	16	32	45
Administrative duties	92	53	25	15	4	2	1
Research	18	59	24	15	2	[a]	–
Other	59	8	70	20	2	[a]	[a]

[a] Less than 0.5 percent.

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[1] It should be borne in mind that the data on research reflect the respondents' own interpretations of the term. An additional 3 percent reported some research at another educational institution, as shown later in professional activities not connected with the junior college position.

[2] The teachers of 80 percent of the home economics courses indicated research activity but, in view of the small number involved and varying interpretations of research, reliability of the estimate is uncertain.

were also shown for teachers of courses in anthropology, biological sciences, earth sciences, and technology. Chemistry, physics, mathematics, and engineering were among those that ranked low. (See appendix table A–17c.)

The amount of time spent in research varied significantly among disciplines. Some fields with low proportions of teachers doing research showed relatively high concentrations of individuals reporting 10 or more hours per week spent in this way. Certain other fields with relatively high proportions of teachers engaged in research showed the least time in this activity.

These data do not include part-time teachers, of whom less than one in 10 reported research as an activity at the college.

Other Activities

Three in five courses were taught by teachers who reported time spent in "other activities" in connection with their junior college positions. Some of the specified activities were participation in seminars, liaison with legislators, supervision of hobby clubs, or "constructing mock-ups." For 70 percent of the courses taught by the teachers with other activities, they spent 5 to 9 hours per week on them; for 22 percent, 10 hours or more.

Among fields with substantial numbers of teachers, "other activities" were more frequently reported by teachers of courses in chemistry, physics, psychology, and the social sciences than by teachers in most other fields. The many teachers of mathematics courses ranked well below average. (See appendix table A–17d.)

The amount of time spent in these other activities was reported largest by teachers of psychology courses. Anthropology, education, and the social sciences also showed high averages. Relatively few hours devoted to other activities were shown by teachers of courses in earth sciences, physics, and technology, among other fields.

Time Spent in Professional Activities Not Connected With Junior College Position

For this study, specific questions were asked concerning the number of hours per week spent on teaching at another educational institution, working toward a bachelor's or advanced degree, research, other salaried employment or self-employment, and "other" activities. These are reported in terms of courses taught by full-time junior college teachers. Some distortion of details in the estimates may have resulted here because the method of analysis involved duplication in number of courses and number of teachers engaged in more than one "outside" activity (see note, appendix table A–18a). The data are as of May 1967; the number of teachers and time spent in these activities may shift during the academic year.

Nine of 10 courses were taught by teachers who reported some outside professional activity. This contrasts with the modest level of research activity associated with the junior college position. Half of this group spent less than 5 hours per week in professional work not connected with the junior college. A little over one-fourth were taught by teachers who spent 5 to 9 hours; one in five by those who spent 10 or more hours per week. A summary of details (shown in appendix tables A–18a to A–18f) can be found in table 2.

In six of the specified fields, 99 to 100 percent of the courses were taught by teachers who reported some outside professional activity—anthropology, health fields, "other physical sciences," psychology, general science, and technology. Two fields relatively low in teachers who engaged in outside activity were chemistry and physics.

Working Toward a Bachelor's or Advanced Degree

One-fifth of the courses were taught by teachers who were working toward a bachelor's or advanced degree (May 1967). By field, the highest ratio, one in three, was in technology. As noted earlier, this field had the greatest proportion of teachers with the bachelor's as their highest degree (appendix table A–7). The lowest ratio was in "other physical sciences." (See appendix table A–18b.)

Of the courses taught by teachers reporting academic study, 72 percent studied less than 10 hours per week; 28 percent, 10 or more, including 5 percent who devoted 20 or more hours, suggesting a more or less full-time student load. There was little variation among fields.

TABLE 2. *Full-time teachers' time spent in activities outside of junior college, by type of activity, 1966–67*

Activity	Percent of courses, teachers reporting specified activity	Percent in activity, by teachers' hours per week						
		Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total in these activities	90	100	51	29	16	3	1	[a]
Working toward a bachelor's or advanced degree	20	100	32	40	23	4	1	–
Salaried employment or self-employment	24	100	48	22	23	6	–	1
Research at another educational institution	3	100	50	32	13	1	–	4
Teaching at another educational institution	11	100	37	47	15	1	–	–
Other professional activities	32	100	71	20	7	1	1	–

[a] Less than 0.5 percent.

Salaried Employment or Self-Employment Away From Junior College

One-fourth of the courses were taught by teachers who also worked outside the junior college in salaried employment or self-employment. Almost half of these involved less than 5 hours per week; nearly one-fourth, 5 to 9 hours; and a little more than one-fourth, 10 or more hours per week in outside employment. (See appendix table A–18c.)

The frequency of full-time teachers doing outside work was highest among teachers of courses in "other physical sciences," general science, technology, earth sciences, psychology, and engineering, in that order. It was low for the biological sciences, mathematics, physics, chemistry, and general physical sciences. The number of hours spent in outside employment also varied by field. It was relatively high in agriculture, engineering, psychology, general physical sciences, and "other physical sciences" and relatively low in the biological sciences and physics. Differences in opportunities among fields for outside employment may account for some of the variations.

Research

Only 3 percent of the teachers reported doing research at another educational institution. (Within their junior colleges, fewer than one-fifth of the full-time teachers were engaged in research.)

Teaching at Other Educational Institutions

Of the courses taught by full-time teachers 11 percent were taught by those who reported teaching also outside the junior college in May 1967. The data are somewhat understated because some teachers reported teaching at another institution but did not enter the time spent, or they reported earnings for teaching but did not report time. These lapses may mean that they had taught elsewhere during the year but were not doing so in May 1967. However, it is believed that these discrepancies are not large.

For 84 percent of the courses, this "outside" teaching amounted to less than 10 hours per week; for 37 percent, less than 5 hours per week.

Variations by field in the ratio of courses whose teachers had outside teaching commitments are not substantial. Some minor fields reported no outside teaching. The number of hours devoted to outside teaching was relatively high for the biological sciences and the earth sciences; relatively low for psychology, the social sciences, and technology. (See appendix table A–18e.)

Where was the outside teaching done? As a favorable indicator, it should be noted that it was generally at higher level institutions. The largest group—for 31 percent of the courses—taught at 4-year colleges, 17 percent at other junior colleges, and 8 percent in high schools. A few taught at more than one type of educational institution, and the remainder taught in elementary schools, special schools, technical schools, or did private tutoring. (See appendix table A–19.)

Differences by field may be related to differences in teaching opportunities. Earth sciences and general physical sciences showed the highest frequency of teachers with a second teaching job in a 4-year college, engineering the lowest of the specified fields. A second teaching job at another junior college was more common in chemistry and psychology; less common in the biological sciences, engineering, mathematics, and technology. In chemistry and physics, a relatively large number of teachers taught in high school. In other kinds of educational institutions, engineering and technology ranked high as subjects taught; the physical sciences ranked low.

The salaries of junior college teachers are discussed in chapter IV, but the subject may be introduced here briefly because of the light it throws on the teacher who holds a second teaching job. Appendix table A–20 shows data on the number of persons who were teaching at outside educational institutions and their junior college salary.

From these data it would appear that, in general and with exceptions, the higher the junior college teaching salary the greater the proportion of teachers who engaged in outside teaching. Eleven percent of those earning $5,000 to $6,999 in their junior college positions were engaged in outside teaching, compared with 39 percent of those earning $13,000 or more.[3] One-third of the teachers with a second teaching job taught in a 4-year college. This ratio also rose in general with size of junior college salary; over half the junior college teachers earning $12,000 or more taught also at a 4-year college.

In chapter II it was pointed out that as a teacher gains in years of experience in teaching his educational qualifications in terms of highest degree appear to advance. Appendix table A–27 shows that the higher the degree of a teacher, generally, the higher is the income he receives in his junior college position. On the presumption that these data indicate that older teachers and teachers with higher degrees tended to receive higher salaries, the relationship observed between salary level and possession of a second teaching job may be attributable, in part at any rate, to the higher qualifications of these teachers. The appeal of a larger total income may be presumed to operate at all salary levels, but for younger teachers and teachers with lower rank and bachelor's and master's degrees only, the opportunities for additional employment may be fewer, and the pressure of efforts to advance their own education may make a greater claim on their time.

Other Professional Activities Outside the Junior College

One-third of the courses were taught by full-time teachers who reported time spent in "other" professional activities. These included working with professional societies, attending meetings, or serving as officers in educational associations. One teacher reported that he was a visiting scientist to the area's high school. In more than two-thirds of the cases, such activities accounted for less than 5 hours per week. By field, the proportion of courses taught by teachers reporting "other" professional activities not connected with the junior college position ranged from 25 to 48 percent. Relatively high ratios were shown for courses in agriculture, education, engineering, and the health fields; low ratios were shown in mathematics and the physical sciences. The number of hours reported as spent on such activities was above average in anthropology, education, chemistry, physics, and psychology and below average in the health fields, earth sciences, and "other physical sciences." (See appendix table A–18f.)

Number of Courses Taught

Data on the number of courses taught by the teachers are shown in appendix table A–21a. As noted earlier, in reporting courses, teachers were asked to combine sections as the same course. Each course thus represents a different offering in the curriculum. Some teachers may have listed as different courses sections of the same course. It is likely, therefore, that the nearly 25,000 courses reported represent an overestimate of courses as defined.[4]

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[3] In previous tables in this chapter, the data are shown in number of courses rather than number of teachers. Proportion of teachers by type of school is almost the same as that for courses, except that a higher number are shown teaching in high school and fewer in the "other" group. This may be because those teaching in high school did not teach as many courses in the junior college and, conversely, those teaching in "other schools" taught more courses in the junior college.

What the data on number of courses taught do reflect, however, is the general fabric of the junior college curriculum in the sciences, mathematics, engineering, and technology. It is evident, for example, that in the universe covered by the study more courses were given in mathematics than in any other field. The biological sciences and the social sciences ranked next in number, followed by courses in technology. Fifth rank was held by chemistry. Physics was sixth; psychology, seventh. (See appendix table A–21a.)

The estimated 25,000 courses were taught by 11,000 persons. (See Note, page 28.) Some teachers were responsible for one course only and some for five or more, but persons teaching either two or three courses accounted for half the teaching staff; the median number of courses was three. The general pattern remains unchanged when the data are confined to the 9,800 full-time teachers (distributions shown in appendix table A–21b).

The size of the teaching burden, as reflected in the number of courses taught, varied markedly among fields. The relative number of teachers with four or five courses was above average in mathematics, agriculture, engineering, and technology. It was below average in the biological sciences, chemistry, physics, earth sciences, psychology, and the social sciences. In most of the latter fields more than half of the teachers taught one or two courses.

Teachers in One Discipline and More Than One Discipline

Teachers were identified in the study as teaching in one subfield or discipline or more than one subfield or discipline.[5] Teachers of courses in more than one discipline included both those teaching in two or more disciplines within the scope of the survey and those, teaching a subject outside the scope of the survey, such as journalism.

It is a measure of the rapid expansion recently of the junior college faculty and of the flexible use of teaching manpower that approximately half the teachers taught in more than one discipline (appendix table A–22). Such "crossing over" was more common in some fields than in others. Courses in the biological sciences, engineering, and chemistry, among other fields, were taught by above-average proportions of teachers teaching in more than one discipline. In mathematics, physics, psychology, agriculture, and technology, the relative number of teachers giving courses in two or more disciplines was, in contrast, below average. These differences are in part due of course to variations in the definitions of discipline and field. All disciplines under the biological sciences, for example, are viewed in this study as one broad field, whereas physics is one of five separate fields identified in the physical sciences.

For obvious reasons, part-time teachers were more likely to be found among teachers in one discipline only, constituting 9 percent of the total but only 3 percent of the teachers giving courses in two or more disciplines.

One in 10 of the teachers giving courses in more than one discipline taught in a field not included in the study. The ratio was higher in some fields—psychology and the social sciences, for example—where some crossover into the humanities took place.

Number of Students Per Class

Teachers were asked to enter on the schedule the number of students for each course taught and the number of hours spent per week teaching the course. To obtain a measure of class size the number of hours was divided by 3 (an assumption that the average class involved 3 hours of teaching per week) and the result divided into the number of students taught. Thus, for example, an entry of 6 hours per week spent in teaching one course to 60 students would yield a class size of 30, probably a course that was taught in two sections.

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[4] Since the number of courses does not literally measure a teacher's workload, a check was made of 10 percent of the returns to determine the number of hours spent per week in classroom teaching. A class was regarded as consisting of three hours of teaching per week, whether classified as one course or one section of a course. Based on the 10-percent sample, it was found that 40 percent of the teachers taught 13 hours or more per week and four or more classes per week.

[5] The attachment to the questionnaire, reproduced in appendix B, lists the fields and subfields or disciplines used in this study. In all cases the codes ending in zero and four others (101, chemistry; 105, earth sciences; 106, physics; and 107, other physical sciences) were classified as fields. All others were considered subfields, or disciplines.

On this assumption, the data suggest that in May 1967 most of the courses in the fields covered by this survey were given in classes numbering fewer than 30 students. One class in four had from 30 to 49 students, and one in 10, 50 students or more per class. One class in 20 was a laboratory course with no classroom teaching time noted. Differences among fields in the way a subject is taught are reflected in differences in class size. Classes tended to be small in mathematics, engineering, physics, and technology and to be large in the biological sciences, psychology, and the social sciences, among others. Behind these dissimilarities are variations in each field in the mix of lectures, classroom discussion, and laboratory practicums. (See appendix table A–23.)

Transfer Credit Status of Courses

The range of subjects offered in the junior colleges is wide, providing instruction in vocational and technical skills, general education courses, and the counterparts of the lower division courses of a 4-year university or college. A study in 1960 stated that "the two-year college in America is focused more on the transfer than the terminal function." The study notes, however, that even though "two-thirds of the students prepared to transfer, . . . only one-third of them actually went beyond the junior college."[6] In a more recent publication, it was pointed out that the first 2 years of every curriculum offered at the University of California can be completed on the junior college campus.[7]

To obtain some information on this subject, teachers were asked whether a course was designed for transfer credit to a 4-year college. Their replies indicate that more than three-fourths of the courses were designed for students who planned to transfer to a higher academic institution (appendix table A–24).

In eight fields the proportion of courses designed for transfer credit exceeded 90 percent—anthropology, biological sciences, general physical sciences, chemistry, earth sciences, psychology, general science, and social sciences. Five of these, it will be noted, are in the natural sciences. The field with the lowest proportion of courses designed for transfer credit was technology, with only one in three so identified. Ranking just above it was "health fields."

Courses not given for transfer credit include a few identified as remedial courses, such as are also given in universities and 4-year colleges.

Appraisal of Texts Used in Courses

The Commission on Science Education of the American Association for the Advancement of Science has, as one of its continuing interests, the improvement of science teaching. The quality of the science courses taught is difficult to assess, but in discussions with members of the Commission during the planning phase of the study it was suggested that some light would be thrown on the subject if teachers were asked to cite textbooks used. Such a question was included in the schedule, as well as a request to check a code list of three reasons for finding the text unsatisfactory, if that was the case.

Teachers in response listed several thousand texts and in most instances offered their appraisals. No attempt was made to evaluate the texts cited, a subject outside the frame of this report. A summary was made, however, of the teachers' 25,800 appraisals.[8]

Those who believe that college teachers in general are critical of their textbooks will be surprised to learn how many junior college science teachers were satisfied with their texts. More than three-fourths of the appraisals rated the texts as satisfactory, 5 percent as too advanced, another 5 percent as too elementary. For the remaining 13 percent, respondents gave another opinion, such as "out of date," or "there is no satisfactory book in the field." (See appendix table A–25.)

A "satisfactory" appraisal was more frequently encountered in engineering, agriculture, health fields, earth sciences, and social sciences than in other fields, but in none was it below 61 percent. Dissatisfaction with texts used was highest in general science, relatively high in anthropology, general physical sciences, technology, and biological sciences. The principal reason cited for dissatisfaction with the texts for general science and general physical sciences was "too advanced" a text. Teachers in the biological sciences, however, tended to cite the books they found unsatisfactory as "too elementary."

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[6] L. L. Medsker, *The Junior College: Progress and Prospect,* Carnegie Series in American Education. New York: McGraw-Hill Book Co., Inc., 1960, p. 112.

[7] Mary Wortham, "The Case for a Doctor of Arts Degree," *AAUP Bulletin,* Winter 1967, p. 372. Presumably, the reference is to public junior colleges in California.

[8] Frequently, teachers cited two or more texts per course. No more than two books per course were included in the tabulations; 14 percent of the appraisals represent second books cited for a course. For 2 percent of the courses, respondents stated that no texts were used.

IV. Junior College Salaries

THIS ANALYSIS shows salaries of junior college science and engineering teachers by region and State and in relation to highest degree earned. Data on other earnings are also presented. All references are to full-time teachers. Chapters III and V also show salary information in reference to their subjects.

In the spring of 1967 a little over half the teachers of science, engineering, and technology in the junior colleges of the country were earning $9,000 or more a year in their junior college jobs. The calculated median salary was $9,140 (appendix table A–26). Although there may have been some 12-month salaries reported, the medians ostensibly are based on 9– 10-month salaries. Almost one in four teachers earned $11,000 or more; 15 percent, $12,000 or more; and 3 percent, $14,000 or more. It may be presumed that the higher paid teachers included department heads and other individuals whose salaries reflected administrative responsibilities in addition to teaching.

At the lower end of the scale were the 14 percent who earned less than $7,000, including 5 percent who earned less than $6,000. As will be noted in the next chapter, "inadequate" salary was a major cause of dissatisfaction among respondents.

A 1965–66 study of 4-year colleges found that the median salary for a 9-month contract that year was $9,081.[1] Data for 1966–67 were not available for comparison. Comparisons of that study with this one are affected by (1) a 1-year lag during which 4-year college salaries are presumed to have gone up, (2) the fact that all teachers in this survey were at least in their second year of junior college teaching, and (3) the lack of data in this study on differences between 9- and 10-month contracts and 12-month contracts.

Regional and State Differences

Regionally, salaries in junior colleges in the West and Southwest were the highest in the country, with a median of $10,250. The lowest median among the four regions was reported by the Southeast—$7,870. Median salaries in the other two regions fell between. It was $8,890 for the Great Lakes and Plains region, and $8,835 for the North Atlantic region (appendix table A–26).

Detailed comparisons among the States cannot be undertaken because of the thinness of the sample in a number of them. Although salary levels in the Southeast were generally below the rest of the country, some States in that region pay higher average salaries than several of the States in other regions, including the West and Southwest. Within each of the other regions, examples may be found of States with salary levels above and below the national average. The highest salary level was the $11,432 median for California, which accounted for 60 percent of all junior college teachers in the region and 24 percent of the junior college teachers in the United States.[2] California's high salary level exerted a marked upward influence on the reported medians for both region and Nation. Other States with medians above the national average included Maryland, Illinois, Michigan, Minnesota, Wisconsin, and Arizona. Mississippi reported the lowest State median.

Differences by Highest Degree Held

As one would expect, higher earned degrees were generally associated with higher salaries.

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[1] *Salaries in Higher Education, 1965–66,* Research Report 1966–R2, Higher Education Series. Washington, D.C.: Research Division, National Education Association, Feb. 1966.

[2] Percentages based on teachers in the fields covered in this survey.

Median salary for the holder of a bachelor's degree was $7,683; for the master's degree, $9,053; and for the doctorate, $11,127 (appendix table A-27).

These differences reflect in part seniority, since holders of a doctorate usually had been on the job longer (appendix table A-6), and in part the higher initial salary paid a person with an advanced degree. Relatively more of those with a doctorate, moreover, may have been department chairmen, held other administrative posts, or had additional responsibilities that may be reflected in higher salaries.

The relatively high median salary reported for teachers with an associate's degree may reflect a concentration in high-salary States of teachers holding this degree.

Other Earnings

In addition to their junior college salaries, teachers were asked to report the amount of any other earnings for the period beginning with the summer of 1966 to the end of the academic year, 1966-67. Virtually all full-time teachers earned additional income, but usually not very much—for 65 percent, less than $2,000. In most instances, this money reflected income for summer school teaching in 1966; of the junior college courses taught by full-time teachers, 54 percent reflected teachers with work experience consisting of teaching only (appendix table A-12). Among the teachers who earned larger amounts of additional income, 35 percent earned $2,000 or more; 17 percent, $3,000 or more; and 5 percent, $6,000 or more (appendix table A-28).

Regionally, the level of other earnings was associated with the level of junior college salaries. Other earnings tended to be high in the West and Southwest, low in the Southeast. State differences were marked, linked in part to differences in the general level of earnings and in part to differences in supplementary employment opportunities.

V. Teacher Attitudes

THIS CHAPTER summarizes information bearing on the teacher's appraisal of his success in teaching the courses assigned to him, his career plans, and his satisfaction with teaching as a career. The data indicate dedication to and satisfaction in junior college science teaching. They dispute conceptions that junior college teachers may not have been carefully selected and are too often holding their positions until something better comes along.

In an earlier reference (appendix table A–10), a partial association was shown between teacher appraisal of success in teaching a course and the number of graduate credits in the field. The association is so tenuous, however, as to raise doubts about its significance. Information presented in this chapter on satisfaction with teaching as a career suggests that appraisal of success in teaching is related to the attitude toward teaching as a career.

Appraisal of Success in Teaching

For each course taught, teachers were asked "What is your appraisal of your success in teaching the course?" The answers were confined to three choices: "barely adequately," "with moderate success," and "quite successfully."

Although the factors underlying these choices were not explored, of the junior college courses, 61 percent were taught "quite successfully," according to the teachers; 37 percent, "with moderate success"; and only 2 percent, "barely adequately" (appendix table A–29).

Teachers in some fields were more ready to claim they taught the subject "quite successfully" than teachers in others. For example, 70 percent or more of the courses in psychology, earth sciences, and "other physical sciences" were reported taught "quite successfully." Among other fields with an above-average proportion of courses taught "quite successfully" were agriculture and the health fields.

A marked tendency toward "moderate success" in the appraisal, on the other hand, was shown for education, chemistry, physics, and general physical sciences courses. Very few in any field thought they taught "barely adequately." (See appendix table A–29.)

Distinctions sometimes made among subject fields concerning the teaching difficulties they present may offer a clue to differences by field in the teacher's appraisal of success in teaching. It may be noted, however, that the five physical sciences by no means display any conformity in this regard.

Career Aims

Teachers were asked to check the activity most closely approximating their career plans in the next 5 years. Five choices were offered: teaching, research, teaching and research, administration, and "other." The low response rate (27 percent) to this question casts some doubt on the representativeness of the data.

Nevertheless, the teachers of 62 percent of the courses taught by the respondents checked "teaching" or "teaching and research" (appendix table A–30). The large proportion selecting teaching as a career is an indication of the commitment of these teachers, at least among these respondents. The small group selecting administration as a career aim (representing 15 percent of the courses taught by respondents) reflects the presence in the teaching body of a minority with a keen interest in the managerial aspects of the college enterprise. The remainder of the courses, 17 percent, were taught by teachers who said their career plans were centered on research. (See appendix table A–30.)

By comparison, only 18 percent of all the junior college courses were taught by teachers who reported having spent any time during an average week in research activities at the junior college, and only 3 percent by those who reported having been engaged in research outside the college precincts (appendix tables A–17c and A–17d). Perhaps the choice of a research career or a teaching-research career represents an identification with the popular image of the professor-teacher-researcher as well as with a specific aspiration.

Is there any relation between career aim and self-appraisal as a teacher? Perhaps some, but apparently not much. Among courses taught by teachers who selected "teaching only" as a career aim, there was a somewhat smaller proportion with teachers who said they taught "barely adequately" than said they taught "with moderate success" or "quite successfully." Relatively more of the courses were taught by "barely adequate" teachers who saw ahead for themselves a career in administration or in a combination of teaching and research. The "research only" selection was less favored in this group. It should be observed, however, that the differences are small; they are barely discernible when comparing the "moderately successful" and the "quite successful."

Satisfaction With Teaching as a Career

Teachers were asked, "How satisfied are you with teaching as a career? Five choices were offered: very dissatisfied, dissatisfied, indifferent, satisfied, and very satisfied. Respondents represented 42 percent of the courses shown in this report.

Consistent with the data just presented on career aims, the teachers of 56 percent of the courses in this group declared themselves "very satisfied"; of 36 percent, "satisfied." Teachers of 8 percent of the courses checked one of the other choices, including 1 percent who said they were "very dissatisfied." (See appendix table A–31.)

Among the teachers, which differ slightly from the data on courses taught, in this study there is substantial agreement with Medsker's 1960 data on how satisfied junior college teachers were with their "present position."[3] The data—as percent of the teachers, not of the courses they taught—are compared below.

Both of the studies show that the great majority of junior college teachers said they liked to teach.

Satisfaction with teaching was, not surprisingly, more pronounced among teachers who hoped to make a career of teaching and among teachers who thought they taught their courses moderately or quite successfully (appendix table A–30).

Among differences observable by field, the teachers of a relatively large number of courses reported themselves as "very satisfied" in anthropology, general physical sciences, psychology, and mathematics. It was below average for chemistry, physics, technology, engineering, agriculture, and the health fields, among others. "Very dissatisfied" as a description of feelings about teaching as a career

Medsker, 1960 (all fields)	*Percent*
Total	100
Completely satisfied	24
Well satisfied	55
Subtotal	79
Neither satisfied nor dissatisfied	8
A little dissatisfied	10
Very dissatisfied	1
No answers and indeterminable responses	2

This study, 1967, science, engineering, and technology teachers (From appendix table A–32)	*Percent*
Total	100
Very satisfied	55
Satisfied	36
Subtotal	91
Indifferent	3
Dissatisfied	4
Very dissatisfied	1
Indeterminant responses	1

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[3] L. L. Medsker, *The Junior College: Progress and Prospect*, Carnegie Series in American Education. New York: McGraw-Hill Book Co., Inc., 1960, p. 174.

attracted very few teachers in any field, but "dissatisfied" appealed to a significantly large minority in engineering, chemistry, and anthropology. (See appendix table A–31.)

Differences by highest degree earned were not significant except with respect to the classes taught by "satisfied" or "very satisfied" teachers. There is broad tendency for possession of a higher degree to be associated with the greatest satisfaction with teaching as a career. Bachelor's were least likely and doctorates most likely to be "very satisfied." The relevant data for courses taught by fulltime teachers are as follows:

Degree	*Percent of total*	*Percent satisfied*	*Percent very satisfied*
Total	91	36	55
Associate	90	34	56
Bachelor's	92	43	49
Master's	91	36	55
Professional	92	33	59
Doctorate	91	30	61

Correlated also with response on the satisfaction scale are the data on salary. The higher the salary the more satisfied, in general, was the teacher. Of the teachers earning less than $5,000, 41 percent reported themselves as "very satisfied" with teaching as a career; among those earning $13,000 to $15,999, 71 percent. Median salary rose from $5,690 among the "very dissatisfied" to $9,570 among the "very satisfied." (See appendix table A–32.)

Teachers who reported themselves as "indifferent," "dissatisfied," or "very dissatisfied" with teaching as a career were asked to assign a primary factor influencing their point of view. They were given a choice of "inadequate salary," "unsatisfactory teaching conditions," and "other." About half checked a primary factor. About four in 10 in this group attributed their indifference or dissatisfaction to inadequate salary, about one-fourth to unsatisfactory teaching conditions. One in three checked "other."

It may be noted that some teachers who had declared themselves satisfied or very satisfied with teaching as a career went on to check one or more of the reasons for dissatisfaction. It is understandable, of course, that satisfaction with teaching as a career is not inconsistent with a belief that salaries are inadequate or teaching conditions unsatisfactory. Approximately one teacher in 10 in the "satisfied" group, and one in 20 in the "very satisfied" group checked one or more of the reasons for dissatisfaction.

APPENDICES

APPENDIX A

Statistical Tables

TABLE		Page
A–1.	Age and sex of junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67	29
A–2.	Age and sex of full-time junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67	30
A–3.	Age and sex of part-time junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67	31
A–4.	Junior college teachers of science, engineering, and technology in public and private colleges, by enrollment size and geographic region and State, 1966–67	32
A–5.	Highest degree earned and college enrollment size, junior college teachers of science, engineering, and technology in public and private colleges, 1966–67	33
A–6.	Years of teaching experience and highest degree earned, junior college teachers of science, engineering, and technology, 1966–67	33
A–7.	Number of courses taught, junior college teachers of science, engineering, and technology, by field and highest degree, 1966–67	34
A–8.	Number of courses taught by junior college teachers of science, engineering, and technology with credits beyond highest degree, by field, number of credits, and percent admitted to doctoral candidacy, 1966–67	35
A–9.	Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's undergraduate and graduate credits in field of teaching, 1966–67	36
A–10.	Number of courses taught by junior college teachers of science, engineering, and technology, by teacher's appraisal of performance, years of experience teaching in field, and undergraduate and graduate credits, 1966–67	36
A–11.	Participation in institutes, traineeship programs, and fellowships since 1960 of junior college teachers of science, engineering and technology, 1966–67	37
A–12.	Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field of course and type of work experience, 1966–67	37
A–13.	Number of courses taught by junior college teachers of science, engineering, and technology, by field of course and years in current appointment, 1966–67	38
A–14.	Number of courses taught by junior college teachers of science, engineering, and technology, by field of course and by level of previous teaching assignment, 1966–67	39
A–15.	Level of students taught since 1955 by full-time and part-time junior college teachers of science, engineering, and technology, 1966–67	39

TABLE Page

A–16. Number of courses taught by junior college teachers of science, engineering, and technology, by field of course and by total years of teaching experience, 1966–67 40
A–17a. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in classroom duties, 1966–67 41
A–17b. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in administrative duties, 1966–67 42
A–17c. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in research, 1966–67 43
A–17d. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in other junior college activities, 1966–67 44
A–18a. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent in professional activities outside the junior college position, 1966–67 45
A–18b. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent working toward an academic degree, 1966–67 46
A–18c. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours in "outside" employment, 1966–67 47
A–18d. Number of courses taught by junior college teachers of science, engineering, and technology, by field and by hours in research at other educational institutions, 1966–67 48
A–18e. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent teaching at other educational institutions, 1966–67 49
A–18f. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent in "other" professional activities outside the junior college position, 1966–67 50
A–19. Number of courses taught by full-time college teachers of science, engineering, and technology also teaching at other educational institutions, by field and by type of "outside" institution, 1966–67 51
A–20. Salaries at junior colleges of full-time teachers of science, engineering, and technology also teaching at other educational institutions, by type of school, 1966–67 52
A–21a. Number of courses taught by junior college teachers of science, engineering, and technology, by field and number per teacher, 1966–67 52
A–21b. Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and number per teacher, 1966–67 53
A–22. Number of courses taught by junior college teachers of science, engineering, and technology, in one or more than one discipline, by field and by full- or part-time status, 1966–67 54
A–23. Number of courses taught by junior college teachers of science, engineering, and technology, by field and number of students per class, 1966–67 55
A–24. Number of courses taught by junior college teachers of science, engineering, and technology, by field and transfer credit status, 1966–67 56

TABLE | Page

A–25. Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's appraisals of textbooks, 1966–67 57

A–26. Salaries of full-time junior college teachers of science, engineering, and technology, by region and State, 1966–67 58

A–27. Salaries and highest degrees of junior college teachers of science, engineering, and technology, 1966–67 59

A–28. Additional earnings of junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67 60

A–29. Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's appraisal of success, 1966–67 61

A–30. Number of courses taught by junior college teachers of science, engineering, and technology, by teacher's appraisals of success, satisfaction with teaching, and career aims, 1966–67 62

A–31. Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's appraisal of satisfaction with teaching, 1966–67 63

A–32. Appraisal of satisfaction with teaching by full-time junior college teachers of science, engineering, and technology, 1966–67 64

NOTES

- The data in these tables represent estimates based on a sample; they cannot be taken as statistically accurate either in numbers or percents to the degree indicated by the precision shown.
- The sample was drawn from a roster of science, engineering, and technology teachers who were on the faculty of junior colleges in 1965–66 and still teaching in junior colleges in 1966–67. Thus, all are at least in their second year of teaching at the institution.
- Because of rounding, totals representing essentially the same universe may vary slightly from one table to another. The tables deal with either courses taught or the teachers conducting the courses. The sample count of courses taught was 5,863. The estimated universe of courses taught was 25,000. The sample count for teachers was 2,540. The estimated total for teachers was 10,780.
- In reporting courses, respondents were asked to combine sections of the same course. The data suggest that an estimated 11,000 teachers taught an estimated 25,000 courses, or an average of 2½ courses per teacher. These courses represent different offerings in the curricula; one course may have been given in several sections. Hence, the average of 2½ courses per teacher does not represent the full teaching load, since some teachers taught two or more sections of a course.
- "Professional degree" in all tables is M.D., L.L.B., EE., etc.

TABLE A–1. *Age and sex of junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67*

Region and State	Total, teachers							Men							Women						
	Number	Percent distribution, by age						Number	Percent distribution, by age						Number	Percent distribution, by age					
		Total	Under 30	30–39	40–49	50–59	60 and over		Total	Under 30	30–39	40–49	50–59	60 and over		Total	Under 30	30–39	40–49	50–59	60 and over
U.S. total	10,762	100	13	32	30	18	7	9,136	85	10	29	25	15	6	1,626	15	3	3	5	3	1
North Atlantic	2,089	100	16	31	29	17	7	1,620	78	11	27	22	14	4	469	22	5	4	7	4	2
Connecticut	115	100	17	26	31	19	7	93	81	11	24	24	19	3	22	19	6	3	6	----	4
Delaware	17	100	41	----	35	24	----	13	77	18	----	35	24	----	4	23	23	----	----	----	----
District of Columbia	9	100	----	100	----	----	----	9	100	----	100	----	----	----	----	----	----	----	----	----	----
Maine	14	100	29	----	42	----	29	10	71	28	----	43	----	----	4	29	----	----	----	----	29
Maryland	186	100	2	28	44	16	10	133	72	2	23	26	11	10	53	28	----	5	18	5	----
Massachusetts	281	100	20	33	26	14	7	221	79	13	29	21	10	6	60	21	7	4	5	4	1
New Hampshire	29	100	----	----	28	72	----	14	48	----	----	28	20	----	15	52	----	----	----	52	----
New Jersey	73	100	11	16	38	25	10	49	67	7	14	24	12	10	24	33	4	3	14	12	----
New York	965	100	19	30	29	17	5	743	77	12	26	22	14	3	222	23	7	4	7	3	2
Pennsylvania	324	100	17	37	20	16	10	263	81	14	31	16	13	7	61	19	4	6	4	2	3
Rhode Island	38	100	8	56	18	18	----	34	89	8	55	18	8	----	4	11	----	----	----	11	----
Vermont	38	100	11	63	11	15	----	38	100	11	63	11	15	----			----	----	----	----	----
Great Lakes and Plains	2,550	100	15	32	30	15	8	2,170	85	11	29	25	12	8	380	15	3	3	4	4	1
Illinois	636	100	11	31	32	16	10	498	78	7	28	23	10	10	138	22	4	3	9	6	----
Indiana	16	100	44	19	12	25	----	12	75	44	19	12	----	----	4	25	----	----	----	25	----
Iowa	231	100	21	34	24	18	3	265	94	20	32	24	15	3	16	6	2	1	----	3	----
Kansas	170	100	10	28	22	22	18	163	96	6	28	22	22	18	7	4	4	----	----	----	----
Michigan	579	100	22	31	29	13	5	501	86	17	30	24	10	5	78	14	5	2	5	2	----
Minnesota	150	100	----	45	33	19	3	140	93	----	44	30	17	2	10	7	----	----	3	3	1
Missouri	300	100	11	40	27	8	14	239	80	8	31	23	6	12	61	20	3	9	4	2	2
Nebraska	27	100	----	26	59	----	15	27	100	----	26	59	----	15	----	----	----	----	----	----	----
North Dakota	85	100	8	13	53	26	----	77	91	8	13	49	21	----	8	9	----	----	5	5	----
Ohio	192	100	20	22	40	8	10	140	73	14	19	30	2	8	52	27	5	3	9	7	3
South Dakota	6	100	----	----	----	100	----	----	----	----	----	----	----	----	6	100	----	----	----	100	----
Wisconsin	108	100	16	26	23	23	12	108	100	16	26	23	23	12	----	----	----	----	----	----	----
Southeast	1,742	100	17	32	26	18	7	1,466	84	15	28	20	15	6	276	16	2	4	6	2	2
Alabama	91	100	21	38	21	10	10	77	85	14	37	14	10	10	14	15	7	2	6	----	----
Arkansas	42	100	45	14	41	----	----	39	93	45	7	41	----	----	3	7	----	7	----	----	----
Florida	646	100	15	27	34	21	3	595	92	15	25	28	22	2	50	8	----	1	6	----	1
Georgia	283	100	14	35	17	22	12	240	85	12	33	15	15	10	44	15	2	2	2	7	2
Kentucky	61	100	28	16	20	18	18	38	62	28	13	5	5	11	23	38	----	3	15	13	7
Louisiana	17	100	----	65	----	35	----	17	100	----	65	----	35	----	----	----	----	----	----	----	----
Mississippi	165	100	14	44	19	16	7	143	87	12	41	15	12	7	22	13	2	3	4	4	----
North Carolina	162	100	26	29	19	19	7	124	77	21	29	9	13	5	38	23	6	----	9	6	2
South Carolina	41	100	10	51	22	----	17	25	61	10	22	12	----	17	15	39	----	29	10	----	----
Tennessee	25	100	----	48	28	24	----	25	100	----	48	28	24	----	----	----	----	----	----	----	----
Virginia	182	100	19	36	27	5	13	120	65	13	23	18	5	6	63	35	6	12	9	----	7
West Virginia	27	100	26	26	26	22	----	23	85	26	11	26	22	----	4	15	----	15	----	----	----
West and Southwest	4,381	100	8	33	32	20	7	3,880	89	7	31	27	17	7	501	11	1	2	4	3	1
Alaska	13	100	----	16	15	69	----	7	54	----	15	15	23	----	6	46	----	----	----	46	----
Arizona	182	100	3	31	55	9	2	164	90	3	31	45	9	2	18	10	----	----	10	----	----
California	2,535	100	6	32	34	22	6	2,281	90	5	29	30	20	6	254	10	1	2	4	3	----
Colorado	131	100	10	46	17	13	14	99	76	6	39	13	4	14	32	24	4	7	4	9	----
Hawaii	31	100	29	10	26	29	6	19	61	29	10	6	10	6	12	39	----	----	19	20	----
Idaho	84	100	10	25	45	5	15	72	86	2	25	38	5	16	12	14	7	----	7	----	----
Montana	20	100	----	85	----	15	----	20	100	----	85	----	15	----	----	----	----	----	----	----	----
Nevada	3	100	----	100	----	----	----	3	100	----	100	----	----	----	----	----	----	----	----	----	----
New Mexico	43	100	----	59	24	17	----	35	83	----	43	24	16	----	8	17	----	17	----	----	----
Oklahoma	128	100	8	29	33	28	2	105	81	8	28	24	19	2	23	19	----	----	9	10	----
Oregon	190	100	9	40	37	11	3	177	94	9	40	33	9	3	13	6	----	----	3	3	----
Texas	546	100	15	33	22	21	9	461	84	14	29	17	16	8	85	16	1	4	5	5	1
Utah	45	100	----	62	13	7	18	45	100	----	62	13	7	18	----	----	----	----	----	----	----
Washington	386	100	13	33	25	16	13	348	90	11	32	21	15	11	38	10	2	1	4	1	2
Wyoming	44	100	20	48	32	----	----	44	100	20	48	32	----	----	----	----	----	----	----	----	----

Note: Percent detail may not add to 100 because of rounding.

TABLE A–2. *Age and sex of full-time junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67*

Region and State	Total, full-time teachers							Men							Women						
		Percent distribution, by age							Percent distribution, by age							Percent distribution, by age					
	Number	Total	Under 30	30–39	40–49	50–59	60 and over	Number	Total	Under 30	30–39	40–49	50–59	60 and over	Number	Total	Under 30	30–39	40–49	50–59	60 and over
U.S. total	9,800	100	13	33	29	18	7	8,366	85	10	30	24	15	6	1,434	15	3	3	5	3	1
North Atlantic	1,867	100	16	32	27	18	7	1,464	78	11	28	20	14	5	403	22	5	4	7	4	2
Connecticut	103	100	20	26	25	21	8	81	79	13	23	19	21	3	22	21	7	3	7	----	4
Delaware	13	100	23	----	46	31	----	13	100	23	----	46	31	----	----	----	----	----	----	----	----
District of Columbia	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Maine	10	100	40	----	60	----	----	10	100	40	----	60	----	----	----	----	----	----	----	----	----
Maryland	132	100	2	30	40	14	14	84	64	2	22	15	11	14	48	36	----	7	26	3	----
Massachusetts	229	100	18	36	25	14	7	186	81	11	33	21	10	6	43	19	7	4	4	3	1
New Hampshire	29	100	----	----	28	72	----	14	48	----	----	27	21	----	15	52	----	----	----	52	----
New Jersey	65	100	8	15	38	28	11	46	71	8	15	23	14	11	19	29	----	----	15	14	----
New York	911	100	19	30	29	18	4	714	78	12	26	22	15	3	197	22	7	4	7	3	1
Pennsylvania	306	100	16	39	18	16	11	251	82	12	33	16	14	7	55	18	4	6	2	2	4
Rhode Island	31	100	10	67	----	23	----	27	87	10	68	----	9	----	4	13	----	----	----	13	----
Vermont	38	100	11	63	10	16	----	38	100	11	63	10	16	----	----	----	----	----	----	----	----
Great Lakes and Plains	2,176	100	14	34	29	15	8	1,860	86	11	31	25	12	7	316	14	4	3	4	3	1
Illinois	533	100	13	32	30	15	10	415	78	8	29	21	10	10	118	22	5	3	9	5	----
Indiana	10	100	70	30	----	----	----	10	100	70	30	----	----	----	----	----	----	----	----	----	----
Iowa	169	100	12	45	23	18	2	158	94	10	43	23	16	2	11	6	2	2	----	2	----
Kansas	148	100	8	31	22	25	14	148	100	8	31	22	25	14	----	----	----	----	----	----	----
Mississippi	550	100	23	32	27	12	6	478	87	18	30	24	9	6	72	13	5	2	4	2	----
Minnesota	137	100	----	49	29	18	4	131	96	----	49	27	18	2	6	4	----	----	3	----	1
Missouri	271	100	9	44	26	9	12	220	81	6	34	25	6	10	51	19	3	10	2	2	2
Nebraska	27	100	----	26	59	----	15	27	100	----	26	59	----	15	----	----	----	----	----	----	----
North Dakota	82	100	9	13	55	23	----	74	90	9	13	50	18	----	8	10	----	----	5	5	----
Ohio	146	100	24	19	42	7	8	102	70	17	17	30	2	4	44	30	7	3	12	5	3
South Dakota	6	100	----	----	----	100	----	----	----	----	----	----	----	----	6	100	----	----	----	100	----
Wisconsin	97	100	10	29	22	26	13	97	100	10	29	22	26	13	----	----	----	----	----	----	----
Southeast	1,642	100	18	32	26	17	7	1,388	85	16	29	20	15	5	254	15	3	2	6	3	1
Alabama	88	100	18	40	22	10	10	74	84	11	38	15	10	10	14	16	7	2	7	----	----
Arkansas	42	100	45	14	41	----	----	39	93	45	7	41	----	----	3	7	----	7	----	----	----
Florida	609	100	16	27	34	21	2	564	93	16	26	28	21	2	45	7	----	2	6	----	----
Georgia	267	100	12	35	18	23	12	227	85	10	33	16	16	10	40	15	2	3	2	7	1
Kentucky	49	100	35	14	19	16	[illegible]	26	53	35	10	----	----	8	23	47	----	4	19	16	8
Louisiana	10	100	----	40	----	60	----	10	100	----	40	----	60	----	----	----	----	----	----	----	----
Mississippi	159	100	15	46	20	15	4	137	86	12	43	16	11	4	22	14	3	3	4	4	----
North Carolina	162	100	26	29	19	19	7	124	76	20	29	9	13	5	38	24	6	----	9	6	3
South Carolina	33	100	12	40	27	----	21	25	76	12	28	15	----	21	8	24	----	12	12	----	----
Tennessee	25	100	----	48	28	24	----	25	100	----	48	28	24	----	----	----	----	----	----	----	----
Virginia	171	100	21	37	24	5	13	114	67	14	25	17	5	6	57	33	6	13	8	----	6
West Virginia	27	100	26	26	26	22	----	23	85	26	11	26	22	----	4	15	----	15	----	----	----
West and Southwest	4,115	100	8	34	31	20	7	3,654	89	7	31	27	17	7	461	11	1	2	4	3	1
Alaska	7	100	----	29	29	42	----	7	100	----	29	29	42	----	----	----	----	----	----	----	----
Arizona	179	100	3	30	55	10	2	161	90	3	30	46	9	2	18	10	----	----	10	----	----
California	2,430	100	6	32	33	23	6	2,183	90	5	29	30	20	6	247	10	1	2	4	3	----
Colorado	131	100	10	46	17	13	14	99	76	6	39	13	4	14	32	24	4	6	5	9	----
Hawaii	29	100	31	10	28	31	----	17	59	31	11	7	10	----	12	41	----	----	21	20	----
Idaho	79	100	10	27	42	5	16	67	85	3	27	34	5	16	12	15	7	----	8	----	----
Montana	20	100	----	85	----	15	----	20	100	----	85	----	15	----	----	----	----	----	----	----	----
Nevada	3	100	----	100	----	----	----	3	100	----	100	----	----	----	----	----	----	----	----	----	----
New Mexico	39	100	----	56	26	18	----	35	90	----	46	26	18	----	4	10	----	10	----	----	----
Oklahoma	111	100	9	30	32	26	3	92	83	9	30	21	20	3	19	17	----	----	11	6	----
Oregon	166	100	8	44	32	12	4	155	93	8	44	28	9	4	11	7	----	----	4	3	----
Texas	468	100	15	35	23	19	8	396	85	15	30	18	15	7	72	15	----	5	5	4	1
Utah	45	100	----	62	13	7	18	45	100	----	62	13	7	18	----	----	----	----	----	----	----
Washington	368	100	14	31	24	17	14	334	91	12	30	21	16	12	34	9	2	1	3	1	2
Wyoming	40	100	23	52	25	----	----	40	100	23	52	25	----	----	----	----	----	----	----	----	----

Note: Percent detail may not add to 100 because of rounding.

TABLE A–3. *Age and sex of part-time junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67*

Region and State	Total, part-time teachers							Men							Women						
	Number	Percent distribution, by age						Number	Percent distribution, by age						Number	Percent distribution, by age					
		Total	Under 30	30–39	40–49	50–59	60 and over		Total	Under 30	30–39	40–49	50–59	60 and over		Total	Under 30	30–39	40–49	50–59	60 and over
U.S. total	962	100	14	24	36	17	9	770	80	11	21	31	11	6	192	20	3	3	5	6	3
North Atlantic	222	100	16	24	42	11	7	156	70	11	19	35	4	1	66	30	5	5	7	7	6
Connecticut	12	100	----	25	75	----	----	12	100	----	25	75	----	----	----	----	----	----	----	----	----
Delaware	4	100	100	----	----	----	----	----	----	----	----	----	----	----	4	100	100	----	----	----	----
District of Columbia	9	100	----	100	----	----	----	9	100	----	100	----	----	----	----	----	----	----	----	----	----
Maine	4	100	----	----	----	----	100	----	----	----	----	----	----	----	4	100	----	----	----	----	100
Maryland	54	100	----	24	54	22	----	49	91	----	24	54	13	----	5	9	----	----	----	9	----
Massachusetts	52	100	27	17	33	17	6	35	67	19	11	25	6	6	17	33	8	6	8	11	----
New Hampshire	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
New Jersey	8	100	38	25	37	----	----	3	37	----	----	37	----	----	5	63	38	25	----	----	----
New York	54	100	13	32	31	7	17	29	54	13	20	21	----	----	25	46	----	11	11	7	17
Pennsylvania	18	100	39	----	61	----	----	12	67	39	----	28	----	----	6	33	----	----	33	----	----
Rhode Island	7	100	----	----	100	----	----	7	100	----	----	100	----	----	----	----	----	----	----	----	----
Vermont			----	----	----	----	----		--	----	----	----	----	----	----	----	----	----	----	----	----
Great Lakes and Plains	374	100	17	19	35	19	10	310	83	16	17	29	11	10	64	17	2	2	5	7	1
Illinois	104	100	----	29	42	22	7	84	81	----	25	37	12	7	20	19	----	4	6	9	----
Indiana	6	100	----	----	33	67	----	2	33	----	----	33	----	----	4	67	----	----	----	67	----
Iowa	111	100	35	16	26	18	5	106	96	35	16	26	14	5	5	4	----	----	----	4	----
Kansas	23	100	30	9	22	----	39	16	70	----	9	22	----	39	7	30	30	----	----	----	----
Michigan	29	100	----	17	45	38	----	23	79	----	17	24	38	----	6	21	----	----	21	----	----
Minnesota	13	100	----	----	69	31	----	9	69	----	----	69	----	----	4	31	----	----	----	31	----
Missouri	29	100	31	----	35	—	34	19	65	31	----	10	----	24	10	35	----	----	24	----	11
Nebraska	----	--	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
North Dakota	3	100	----	----	----	100	----	3	100	----	----	----	100	----	----	----	----	----	----	----	----
Ohio	46	100	7	33	30	13	17	38	83	7	28	30	----	18	8	17	----	4	----	13	----
South Dakota	----	--	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Wisconsin	10	100	70	----	30	----	----	10	100	70	----	30	----	----	----	----	----	----	----	----	----
Southeast	100	100	10	33	20	19	18	78	78	10	26	16	19	7	22	22	----	7	4	----	11
Alabama	3	100	100	----	----	----	----	3	100	100	----	----	----	----	----	----	----	----	----	----	----
Arkansas	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Florida	36	100	----	22	25	39	14	31	86	----	22	25	39	----	5	14	----	----	----	----	14
Georgia	17	100	41	35	----	----	24	13	76	41	35	----	----	----	4	24	----	----	----	----	24
Kentucky	12	100	----	25	25	25	25	12	100	----	25	25	25	25	----	----	----	----	----	----	----
Louisiana	7	100	----	100	----	----	----	7	100	----	100	----	----	----	----	----	----	----	----	----	----
Mississippi	6	100	----	----	----	33	67	6	100	----	----	----	33	67	----	----	----	----	----	----	----
North Carolina	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
South Carolina	7	100	----	100	----	----	----	----	----	----	----	----	----	----	7	100	----	100	----	----	----
Tennessee	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Virginia	12	100	----	17	66	----	17	6	50	----	17	33	----	----	6	50	----	----	33	----	17
West Virginia	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
West and Southwest	266	100	10	27	39	19	5	226	85	6	26	36	12	5	40	15	4	2	3	6	----
Alaska	6	100	----	----	----	100	----	----	----	----	----	----	----	----	6	100	----	----	----	100	----
Arizona	3	100	----	100	----	----	----	3	100	----	100	----	----	----	----	----	----	----	----	----	----
California	105	100	10	28	53	9	----	98	93	7	28	50	8	----	7	7	4	----	3	----	----
Colorado	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hawaii	2	100	----	----	----	----	100	2	100	----	----	----	----	100	----	----	----	----	----	----	----
Idaho	5	100	----	----	100	----	----	5	100	----	----	100	----	----	----	----	----	----	----	----	----
Montana	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nevada	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
New Mexico	4	100	----	100	----	----	----	----	----	----	----	----	----	----	4	100	----	100	----	----	----
Oklahoma	17	100	----	18	41	41	----	13	77	----	18	41	18	----	4	23	----	----	----	23	----
Oregon	24	100	17	12	71	----	----	22	92	17	12	63	----	----	2	8	----	----	8	----	----
Texas	78	100	15	24	12	36	13	65	83	8	24	11	27	13	13	17	8	----	----	9	----
Utah	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Washington	18	100	----	61	39	----	----	14	78	----	61	17	----	----	4	22	----	----	22	----	----
Wyoming	4	100	----	----	100	----	----	4	100	----	----	100	----	----	----	----	----	----	----	----	----

Note: Percent detail may not add to 100 because of rounding.

TABLE A–4. *Junior college teachers of science, engineering, and technology in public and private colleges, by enrollment size and geographic region and State, 1966–67*

Region and State	Teachers, all junior colleges							Teachers, public colleges							Teachers, private colleges						
	Number	Percent distribution, by enrollment size						Number	Percent distribution, by enrollment size						Number	Percent distribution, by enrollment size					
		Total	Less than 200	200-499	500-999	1,000-2,499	2,500 or more		Total	Less than 200	200-499	500-999	1,000-2,499	2,500 or more		Total	Less than 200	200-499	500-999	1,000-2,499	2,500 or more
U.S. total	10,780	100	2	10	16	25	47	9,268	100	----	7	14	25	54	1,512	100	11	31	31	22	5
North Atlantic	2,103	100	3	12	23	31	31	1,533	100	1	8	19	32	40	570	100	9	25	34	27	5
Connecticut	115	100	----	17	24	59	----	68	100	----	28	37	35	----	47	100	----	----	6	94	----
Delaware	20	100	----	----	100	----	----	----	----	----	----	----	----	----	20	100	----	----	100	----	----
District of Columbia	9	100	----	100	----	----	----	----	----	----	----	----	----	----	9	100	----	100	----	----	----
Maine	14	100	----	100	----	----	----	----	----	----	----	----	----	----	14	100	----	100	----	----	----
Maryland	187	100	3	18	38	5	36	176	100	----	17	40	5	38	11	100	46	54	----	----	----
Massachusetts	281	100	3	9	31	57	----	125	100	----	4	35	61	----	156	100	5	13	28	54	----
New Hampshire	29	100	----	28	72	----	----	8	100	----	100	----	----	----	21	100	----	----	100	----	----
New Jersey	73	100	3	----	57	18	22	19	100	----	----	100	----	----	54	100	4	----	42	24	30
New York	977	100	2	7	11	23	57	864	100	----	----	10	26	64	113	100	18	59	21	2	----
Pennsylvania	323	100	6	22	24	44	4	233	100	1	19	23	57	----	90	100	18	30	28	10	14
Rhode Island	38	100	----	----	37	63	----	24	100	----	----	----	100	----	14	100	----	----	100	----	----
Vermont	37	100	----	43	57	----	----	16	100	----	100	----	----	----	21	100	----	----	100	----	----
Great Lakes and Plains	2,550	100	4	16	19	23	38	2,179	100	1	13	19	23	44	371	100	21	31	21	27	----
Illinois	635	100	6	4	17	34	39	519	100	----	2	15	35	48	116	100	31	15	25	29	----
Indiana	20	100	40	----	----	60	----	12	100	----	----	----	100	----	8	100	100	----	----	----	----
Iowa	280	100	4	33	36	27	----	230	100	5	40	33	22	----	50	100	----	----	52	48	----
Kansas	171	100	2	35	41	22	----	151	100	----	29	46	25	----	20	100	15	85	----	----	----
Michigan	578	100	----	3	2	9	86	571	100	----	3	2	9	86	7	100	----	57	43	----	----
Minnesota	150	100	8	33	40	19	----	146	100	5	34	41	20	----	4	100	100	----	----	----	----
Missouri	300	100	1	21	31	10	37	221	100	----	4	36	10	50	79	100	5	67	17	11	----
Nebraska	26	100	----	42	58	----	----	26	100	----	42	58	----	----	----	----	----	----	----	----	----
North Dakota	84	100	7	24	----	69	----	78	100	----	26	----	74	----	6	100	100	----	----	----	----
Ohio	192	100	9	7	4	28	52	139	100	----	----	----	28	72	53	100	32	25	15	28	----
South Dakota	6	100	----	100	----	----	----	----	----	----	----	----	----	----	6	100	----	100	----	----	----
Wisconsin	108	100	----	32	24	26	18	86	100	----	36	30	12	22	22	100	----	18	----	82	----
Southeast	1,744	100	2	16	23	33	26	1,370	100	1	10	20	36	33	374	100	4	38	37	21	----
Alabama	90	100	----	24	55	21	----	85	100	----	22	56	22	----	5	100	----	60	40	----	----
Arkansas	41	100	7	46	15	32	----	32	100	----	59	----	41	----	9	100	33	----	67	----	----
Florida	645	100	1	6	6	31	56	606	100	1	3	6	30	60	39	100	----	44	18	38	----
Georgia	283	100	----	22	24	45	9	230	100	----	13	20	56	11	53	100	----	64	36	----	----
Kentucky	63	100	----	40	55	5	----	56	100	----	38	57	5	----	7	100	----	57	43	----	----
Louisiana	17	100	----	----	----	65	35	17	100	----	----	----	65	35	----	----	----	----	----	----	----
Mississippi	165	100	----	13	49	38	----	144	100	----	----	57	43	----	21	100	----	100	----	----	----
North Carolina	163	100	4	26	16	26	28	70	100	9	16	3	7	65	93	100	----	34	26	40	----
South Carolina	42	100	----	10	90	----	----	----	----	----	----	----	----	----	42	100	----	10	90	----	----
Tennessee	25	100	----	24	48	28	----	----	----	----	----	----	----	----	25	100	----	24	48	28	----
Virginia	183	100	3	22	21	47	7	117	100	----	17	8	63	12	66	100	8	30	44	18	----
West Virginia	27	100	26	----	48	26	----	13	100	----	----	100	----	----	14	100	50	----	----	50	----
West and Southwest	4,383	100	1	5	8	19	67	4,186	100	----	3	7	20	70	197	100	10	38	26	----	26
Alaska	14	100	86	----	----	14	----	8	100	75	----	----	25	----	6	100	100	----	----	----	----
Arizona	182	100	----	----	10	21	69	182	100	----	----	10	21	69	----	----	----	----	----	----	----
California	2,535	100	----	2	3	6	89	2,500	100	----	1	3	6	90	35	100	17	37	46	----	----
Colorado	131	100	----	2	17	70	11	131	100	----	2	17	70	11	----	----	----	----	----	----	----
Hawaii	30	100	----	43	----	57	----	19	100	----	10	----	90	----	11	100	----	100	----	----	----
Idaho	83	100	----	----	11	----	89	41	100	----	----	22	----	78	42	100	----	----	----	----	100
Montana	20	100	----	100	----	----	----	20	100	----	100	----	----	----	----	----	----	----	----	----	----
Nevada	3	100	100	----	----	----	----	----	----	----	----	----	----	----	3	100	100	----	----	----	----
New Mexico	42	100	----	52	48	----	----	42	100	----	52	48	----	----	----	----	----	----	----	----	----
Oklahoma	130	100	----	31	19	46	4	100	100	----	23	12	60	5	30	100	----	57	43	----	----
Oregon	191	100	2	----	37	36	25	187	100	----	----	38	37	25	4	100	100	----	----	----	----
Texas	545	100	----	7	10	41	42	479	100	----	1	6	47	46	66	100	----	50	33	----	17
Utah	44	100	----	----	66	34	----	44	100	----	----	66	34	----	----	----	----	----	----	----	----
Washington	388	100	----	----	6	37	57	388	100	----	----	6	37	57	----	----	----	----	----	----	----
Wyoming	45	100	----	47	----	53	----	45	100	----	47	----	53	----	----	----	----	----	----	----	----

Note: Percent detail may not add to 100 because of rounding.

TABLE A–5. *Highest degree earned and college enrollment size, junior college teachers of science, engineering, and technology in public and private colleges, 1966–67*

Control of school and highest degree earned by teachers	Total: Number of teachers	Total: Percent distribution	Teachers, by college enrollment size: Less than 1,000	Teachers, by college enrollment size: 1,000–2,499	Teachers, by college enrollment size: 2,500 or more
			Number of teachers		
All junior colleges	10,704	100	3,080	2,625	4,999
			Percent distribution		
Doctorate	1,014	9	10	6	11
Professional degree	326	3	3	4	3
Master's	7,925	74	73	72	75
Bachelor's	1,140	11	12	13	8
Associate	105	1	1	2	1
Other	194	2	1	3	2
			Number of teachers		
Public junior colleges	9,200	100	1,985	2,299	4,916
			Percent distribution		
Doctorate	850	9	9	6	11
Professional degree	271	3	3	4	3
Master's	6,889	75	74	75	75
Bachelor's	924	10	12	11	8
Associate	84	1	1	1	1
Other	182	2	1	3	2
			Number of teachers		
Private junior colleges	1,504	100	1,095	326	83
			Percent distribution		
Doctorate	164	11	12	7	17
Professional degree	55	4	3	5	----
Master's	1,036	69	71	58	83
Bachelor's	216	14	13	23	----
Associate	21	1	[a]	5	----
Other	12	1	1	2	----

[a] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–6. *Years of teaching experience and highest degree earned, junior college teachers of science, engineering, and technology, 1966–67*

Years of teaching experience	Number of teachers	Percent of teachers, by highest degree earned: Total	Doctorate	Professional	Master's	Bachelor's	Associate	Other
Total	10,704	100	9	3	74	11	1	2
1–2	839	100	7	5	67	18	3	----
3–4	1,304	100	5	6	65	19	2	3
5–9	3,227	100	7	3	77	10	1	2
10 or more	4,254	100	12	2	78	5	1	2
No report	1,080	100	14	3	63	17	1	2
Total [a]	9,624	100	100	100	100	100	100	100
1–2	839	9	7	15	8	15	27	----
3–4	1,304	14	7	27	12	26	24	21
5–9	3,227	33	28	34	34	34	12	36
10 or more	4,254	44	58	24	46	24	36	43

[a] Excludes no report to permit percent distributions of known experience only; nonresponse for experience amounted to 10 percent of the total number of teachers who reported their highest degree.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–7. *Number of courses taught, junior college teachers of science, engineering, and technology, by field and highest degree, 1966–67*

Field of course	Number of courses (sections combined as single course)	Percent of courses, by teacher's highest degree				
		Total	Doctorate	Master's	Bachelor's	Other [a]
Total	24,591	100	9	74	11	6
Agriculture	444	100	6	79	14	1
Anthropology	205	100	10	85	5	-----
Biological sciences	3,480	100	14	79	5	2
Education	132	100	12	73	4	11
Engineering	983	100	2	64	28	6
Health fields	298	100	1	64	14	21
Home economics	[b] 50	-----	-----	-----	-----	-----
Library science	[b] 2	-----	-----	-----	-----	-----
Mathematics	5,878	100	3	82	13	2
Physical sciences:						
Physical sciences, general	417	100	13	76	10	1
Chemistry	2,119	100	13	81	5	1
Earth sciences	399	100	19	72	6	3
Physics	1,303	100	5	84	7	4
Other physical sciences	168	100	8	83	5	4
Psychology	1,591	100	26	67	1	6
Science, general	62	100	19	81	-----	-----
Social sciences	3,438	100	10	81	5	4
Technology	3,082	100	1	45	30	24
Interdisciplines	[b] 15	-----	-----	-----	-----	-----
Other disciplines	525	100	10	74	12	4

[a] Includes professional and associate degrees.

[b] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–8. *Number of courses taught by junior college teachers of science, engineering, and technology with credits beyond highest degree, by field, number of credits, and percent admitted to doctoral candidacy, 1966–67*

Field of course	Courses taught by teachers with credits beyond highest degree		Percent of courses, by number of credits earned by teachers beyond highest degree [a]				Percent of courses taught by teachers admitted to Ph.D. candidacy
	Number	Percent of total in survey	Total	1–19	20–39	40 or more	
Total	16,538	70	100	35	31	34	16
Agriculture	317	76	100	47	26	27	14
Anthropology	162	85	100	21	27	52	33
Biological sciences	2,326	69	100	36	30	34	16
Education	81	63	100	22	22	56	36
Engineering	688	77	100	38	29	33	7
Health fields	138	48	100	56	25	19	30
Home economics	[b] 39	78	------	------	------	------	------
Library science	[b] 2	100	------	------	------	------	------
Mathematics	4,122	74	100	32	32	36	11
Physical sciences:							
Physical sciences, general	303	77	100	39	32	29	5
Chemistry	1,364	67	100	38	34	28	14
Earth sciences	281	75	100	29	25	46	14
Physics	902	72	100	39	35	26	11
Other physical sciences	113	70	100	49	16	35	8
Psychology	1,112	76	100	28	28	44	26
Science, general	[b] 46	79	------	------	------	------	------
Social sciences	2,436	75	100	34	31	35	27
Technology	1,734	57	100	42	33	25	13
Interdisciplines	[b] 7	50	------	------	------	------	------
Other disciplines	365	69	100	41	27	32	17

[a] Generally, credits were reported in semester hours. Quarterly credits or "units" reported were converted if possible.

[b] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–9. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's undergraduate and graduate credits in field of teaching, 1966–67*

Field of course	Number of courses	Percent of courses, by teacher's undergraduate credits in field					Number of courses	Percent of courses, by teacher's graduate credits in field				
		Total	Zero	1–20	21–40	Over 40		Total	Zero	1–20	21–40	Over 40
Total	[a] 23,576	100	3	23	46	28	[a] 23,241	100	10	30	33	27
Agriculture	428	100	[b]	35	25	40	433	100	8	57	24	11
Anthropology	192	100	19	51	23	7	204	100	7	44	27	22
Biological sciences	3,456	100	1	15	48	35	3,454	100	3	21	34	42
Education	105	100	----	36	61	3	104	100	----	17	52	31
Engineering	873	100	7	39	20	34	810	100	33	38	18	11
Health fields	273	100	10	23	20	47	247	100	20	36	26	18
Home economics	[c] 50	----	----	----	----	----	[c] 50	----	----	----	----	----
Library science	[c] 2	----	----	----	----	----	[c] 2	----	----	----	----	----
Mathematics	5,736	100	[b]	16	65	18	5,684	100	7	28	39	26
Physical sciences:												
Physical sciences, general	411	100	1	16	41	42	407	100	14	38	30	19
Chemistry	2,035	100	1	13	54	31	2,037	100	4	31	38	27
Earth sciences	386	100	4	13	41	42	380	100	10	24	28	38
Physics	1,263	100	----	36	43	21	1,261	100	7	35	41	17
Other physical sciences	166	100	10	33	22	36	166	100	19	51	10	20
Psychology	1,521	100	2	36	42	20	1,552	100	----	15	33	52
Science, general	58	100	----	38	16	46	59	100	5	34	27	34
Social sciences	3,327	100	1	25	47	27	3,355	100	3	27	41	29
Technology	2,811	100	10	32	23	35	2,553	100	37	44	14	5
Interdiciplines	[c] 8	----	----	----	----	----	[c] 8	----	----	----	----	----
Other disciplines	475	100	8	38	39	15	475	100	8	38	39	15

[a] For about 1,280 courses, teachers did not respond to the question on number of undergraduate credits they held; for approximately 1,620 courses, the number of graduate credits.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–10. *Number of courses taught by junior college teachers of science, engineering, and technology, by teacher's appraisal of performance, years of experience teaching in field, and undergraduate and graduate credits, 1966–67*

Teacher's appraisal and years of experience teaching in field	Number of courses [a]	Percent of courses, by teacher's undergraduate credits in field					Number of courses [a]	Percent of courses, by teacher's graduate credits in field				
		Total	Zero	1–20	21–40	Over 40		Total	Zero	1–20	21–40	Over 40
All teachers	23,568	100	3	23	46	28	23,231	100	10	30	33	27
1–2	3,642	100	4	29	41	26	3,570	100	19	32	31	18
3–5	6,046	100	4	24	43	29	5,926	100	11	31	34	24
Over 5	13,880	100	2	22	49	27	13,735	100	8	29	33	30
Teach barely adequately	493	100	4	30	39	27	482	100	17	31	30	22
1–2	166	100	6	40	30	24	162	100	34	28	27	11
3–5	132	100	6	26	39	29	133	100	12	38	34	16
Over 5	195	100	----	24	47	29	187	100	7	27	30	36
Teach moderately successfully	8,769	100	2	24	48	26	8,616	100	11	30	36	23
1–2	1,881	100	3	32	42	23	1,824	100	21	32	32	15
3–5	2,273	100	2	24	45	29	2,213	100	9	34	37	20
Over 5	4,615	100	2	21	52	25	4,579	100	8	28	37	27
Teach quite successfully	14,228	100	3	23	46	28	14,072	100	9	29	32	30
1–2	1,584	100	4	26	42	28	1,575	100	16	33	29	22
3–5	3,622	100	5	24	42	29	3,561	100	12	28	34	26
Over 5	9,022	100	2	22	48	28	8,936	100	7	30	31	32

[a] For about 1,290 courses teachers did not respond to the question on number of undergraduate credits they held; for approximately 1,630 courses, the number of graduate credits.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–11. *Participation in institutes, traineeship programs, and fellowships since 1960 of junior college teachers of science, engineering, and technology, 1966–67*

Sponsor	Teachers participating					Institutes, traineeships, and fellowships			
	Number	Percent distribution				Number	Percent distribution		
		Total	Both academic year and summer	Academic year	Summer		Total	Academic year	Summer
Total	7,923	100	8	29	63	12,308	100	21	79
National Science Foundation	5,805	100	10	24	66	9,992	100	22	78
National Defense Education Act	214	100	--	32	68	301	100	33	67
Industrial firms	101	100	--	43	57	267	100	58	42
Other (including private institutions or foundations)	[a] 1,803	100	--	46	54	[a] 1,748	100	7	93

[a] The apparent discrepancy between estimated numbers of teachers and of institutes, traineeships, and fellowships is due to the use of slightly different inflation factors in estimating totals from the sample.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–12. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field of course and type of work experience, 1966–67*

Field of course	Number of courses	Percent of courses, by type of teacher's work experience since 1955				
		Total	Teaching	Teaching and research [a]	Teaching and other	Teaching, research, and other [a]
Total	23,467	100	54	8	32	6
Agriculture	415	100	58	8	31	3
Anthropology	192	100	60	6	22	12
Biological sciences	3,355	100	59	14	21	6
Education	128	100	34	4	55	7
Engineering	899	100	40	3	51	6
Health fields	288	100	42	8	44	6
Home economics	[b] 50	---	---	---	---	---
Library science	[b] 2	---	---	---	---	---
Mathematics	5,560	100	68	6	22	4
Physical sciences:						
Physical sciences, general	391	100	58	14	23	5
Chemistry	2,037	100	61	16	18	5
Earth sciences	377	100	48	7	34	11
Physics	1,248	100	48	12	34	6
Other physical sciences	160	100	42	8	50	---
Psychology	1,467	100	31	6	51	12
Science, general	58	100	50	5	45	---
Social science	3,245	100	51	6	38	5
Technology	3,049	100	38	5	49	8
Interdisciplines	[b] 15	---	---	---	---	---
Other disciplines	531	100	54	4	39	3

[a] The questionnaire did not provide a definition of research.

[b] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–13. *Number of courses taught by junior college teachers of science, engineering, and technology, by field of course and years in current appointment, 1966–67*

Field of course	Number of courses	Percent of courses, by years in current appointment				
		Total	1–2	3–5	6–11	12 or more
Total	24,411	100	32	29	23	16
Agriculture	439	100	27	20	22	31
Anthropology	191	100	30	31	25	14
Biological sciences	3,472	100	34	28	21	17
Education	129	100	36	19	38	7
Engineering	973	100	26	23	31	20
Health fields	300	100	32	32	15	21
Home economics	[a] 46					
Library science	[a] 2					
Mathematics	5,836	100	36	29	21	14
Physical sciences:						
Physical sciences, general	415	100	44	25	23	8
Chemistry	2,105	100	30	28	25	17
Earth sciences	387	100	30	32	26	12
Physics	1,288	100	27	26	31	16
Other physical sciences	166	100	37	32	21	10
Psychology	1,589	100	31	36	22	11
Science, general	62	100	29	26	34	11
Social sciences	3,422	100	36	31	19	14
Technology	3,049	100	29	30	25	16
Interdisciplines	[a] 15					
Other disciplines	525	100	32	25	24	19

[a] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–14. *Number of courses taught by junior college teachers of science, engineering, and technology, by field of course and by level of previous teaching assignment, 1966–67*

Field of course	Number of courses	Percent of courses, by previous teaching assignment					
		Total	Junior college	Four-year college	High school	Other	None
Total	24,854	100	16	4	27	9	44
Agriculture	444	100	13	1	27	5	54
Anthropology	205	100	29	4	12	18	37
Biological sciences	3,489	100	18	3	35	10	34
Education	131	100	13	6	25	21	35
Engineering	987	100	14	2	15	6	63
Health fields	302	100	16	4	23	13	44
Home economics	[a] 50	--------	--------	--------	--------	--------	--------
Library science	[a] 2	--------	--------	--------	--------	--------	--------
Mathematics	5,946	100	13	4	37	9	37
Physical sciences:							
Physical sciences, general	418	100	17	2	39	8	34
Chemistry	2,120	100	16	4	32	7	41
Earth sciences	398	100	24	3	18	10	45
Physics	1,310	100	15	4	27	7	47
Other physical sciences	168	100	17	4	15	10	54
Psychology	1,605	100	18	3	14	15	50
Science, general	63	100	19	--------	49	--------	32
Social sciences	3,471	100	20	7	25	7	41
Technology	3,196	100	12	3	14	9	62
Interdisciplines	[a] 15	--------	--------	--------	--------	--------	--------
Other disciplines	534	100	19	4	21	9	47

[a] Distribution not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–15. *Level of students taught since 1955 by full-time and part-time junior college teachers of science, engineering, and technology, 1966–67*

Employment status	Number of teachers	Percent of teachers, by level of students								
		Total	Freshmen only	Sophomores only	Freshmen and sophomores only	High school students only	Freshmen, sophomores, and high school students	Freshmen, sophomores, and other students [a]	Freshmen, sophomores, high school, and other students [a]	Other [b]
Total	10,190	100	4	4	45	[c]	28	11	6	2
Full-time	9,326	100	4	4	46	[c]	28	11	5	2
Part-time	864	100	10	11	34	1	26	10	4	4
Total	10,190	100	100	100	100	[d]	100	100	100	100
Full-time	9,326	92	80	79	94	[d]	92	92	94	85
Part-time	864	8	20	21	6	[d]	8	8	6	15

[a] Includes 4-year colleges.

[b] Includes those reporting freshman and high school students only and sophomore and high school students only.

[c] Less than 0.5 percent.

[d] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–16. *Number of courses taught by junior college teachers of science, engineering, and technology, by field of course and by total years of teaching experience, 1966–67*

Field of course	Number of courses	Percent of courses, by years of teaching experience [a]				
		Total	1–2	3–5	6–11	12 or more
Total	24,473	100	9	20	38	33
Agriculture	434	100	9	14	23	54
Anthropology	197	100	6	22	45	27
Biological sciences	3,456	100	7	16	40	37
Education	128	100	12	11	51	26
Engineering	976	100	11	23	33	33
Health fields	303	100	10	24	25	41
Home economics	[b] 50					
Library science	[b] 2					
Mathematics	5,838	100	7	19	41	33
Physical sciences:						
Physical sciences, general	415	100	7	14	47	32
Chemistry	2,105	100	6	14	43	37
Earth sciences	387	100	11	13	51	25
Physics	1,290	100	10	13	43	34
Other physical sciences	168	100	20	26	35	19
Psychology	1,587	100	13	27	33	27
Science, general	63	100	5	13	55	27
Social sciences	3,441	100	11	24	37	28
Technology	3,095	100	12	27	32	29
Interdisciplines	[b] 14					
Other disciplines	524	100	7	24	38	31

[a] In any field and at any level.

[b] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–17a. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in classroom duties, 1966–67*

Field of course	Number of courses	Percent of courses, by teacher's hours per week in classroom duties [a]						
		Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	23,453	100	[b]	[b]	6	16	32	45
Agriculture	415	100	[b]	[b]	5	12	34	48
Anthropology	192	100	-------	-------	10	12	28	50
Biological sciences	3,355	100	[b]	-------	4	19	34	42
Education	128	100	-------	-------	20	20	19	41
Engineering	895	100	[b]	-------	5	19	33	43
Health fields	288	100	1	2	6	16	38	37
Home economics	[c] 50	-------	-------	-------	-------	-------	-------	-------
Library science	[c] 2	-------	-------	-------	-------	-------	-------	-------
Mathematics	5,559	100	[b]	-------	6	17	32	45
Physical sciences:								
Physical sciences, general	391	100	1	-------	11	13	38	37
Chemistry	2,037	100	-------	-------	4	18	32	46
Earth sciences	376	100	-------	-------	5	16	37	42
Physics	1,248	100	-------	-------	4	14	36	46
Other physical sciences	160	100	-------	-------	24	6	40	30
Psychology	1,460	100	-------	1	19	20	22	38
Science, general	58	100	-------	-------	3	35	31	31
Social sciences	3,245	100	[b]	[b]	6	15	29	50
Technology	3,048	100	-------	-------	5	13	37	45
Interdisciplines	[c] 14	-------	-------	-------	-------	-------	-------	-------
Other disciplines	532	100	-------	[b]	6	13	32	48

[a] Includes classroom teaching, laboratory or shop (including preparation time), and other related classroom duties (including student contact time, preparing class material, correcting papers, and grading students).

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–17b. ***Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in administrative duties, 1966–67***

Field of course	Number of courses	Percent of courses, by teacher's hours per week in administrative duties [a]						
		Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	21,533	100	53	25	15	4	2	1
Agriculture	379	100	33	36	26	2	2	1
Anthropology	170	100	56	27	15	1	-------	1
Biological sciences	3,106	100	54	21	17	7	1	[b]
Education	105	100	27	29	14	16	9	5
Engineering	815	100	44	24	22	6	1	3
Health fields	259	100	38	33	15	7	7	-------
Home economics	[c] 21	-------	-------	-------	-------	-------	-------	-------
Library science	[c] 2	-------	-------	-------	-------	-------	-------	-------
Mathematics	5,033	100	65	19	11	3	1	1
Physical sciences:								
Physical sciences, general	365	100	56	23	13	2	4	2
Chemistry	1,893	100	51	28	13	5	2	1
Earth sciences	367	100	48	27	20	2	3	-------
Physics	1,136	100	55	28	12	4	1	-------
Other physical sciences	158	100	60	19	3	18	-------	-------
Psychology	1,278	100	46	27	18	5	4	[b]
Science, general	56	100	55	27	14	4	-------	-------
Social sciences	2,983	100	53	25	15	3	3	1
Technology	2,900	100	44	31	19	3	2	1
Interdisciplines	[c] 15	-------	-------	-------	-------	-------	-------	-------
Other disciplines	492	100	51	21	19	5	3	1

[a] Includes departmental administrative work, record keeping, preparing reports, faculty meetings, committee work, coaching athletics, etc.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–17c. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in research, 1966–67*

Field of course	Courses taught by teachers in research [a]		Percent of courses, by teacher's hours per week in research					
	Number	Percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39
Total	4,248	18	100	59	24	15	2	[b]
Agriculture	61	15	100	35	39	10	3	13
Anthropology	[c] 41	21	-------	-------	-------	-------	-------	-------
Biological sciences	813	24	100	49	35	13	3	-------
Education	[c] 23	18	-------	-------	-------	-------	-------	-------
Engineering	128	14	100	94	-------	6	-------	-------
Health fields	[c] 40	14	-------	-------	-------	-------	-------	-------
Home economics	[c] 40	[e] 80	-------	-------	-------	-------	-------	-------
Library science [d]	-------	-------	-------	-------	-------	-------	-------	-------
Mathematics	699	12	100	68	9	20	3	-------
Physical sciences:								
Physical sciences, general	60	15	100	67	27	6	-------	-------
Chemistry	294	14	100	45	46	6	3	-------
Earth sciences	96	25	100	51	20	21	8	-------
Physics	128	10	100	50	30	20	-------	-------
Other physical sciences	[c] 20	12	-------	-------	-------	-------	-------	-------
Psychology	454	31	100	74	19	7	-------	-------
Science, general	[c] 5	9	-------	-------	-------	-------	-------	-------
Social sciences	623	19	100	51	30	16	3	-------
Technology	629	21	100	62	17	21	[b]	-------
Interdisciplines	[c] 4	28	-------	-------	-------	-------	-------	-------
Other disciplines	90	17	100	62	26	6	6	-------

[a] Courses taught by full-time teachers who reported time spent in the performance or administration of research in connection with their junior college positions.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

[d] No time reported in research.

[e] Error factor unknown.

Note: Percent detail may not add to 100 because of rounding. The questionnaire did not provide a definition of research. In addition to these courses taught by full-time teachers, 92 courses were taught by part-time teachers who reported research.

TABLE A–17d. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and hours spent in other junior college atcivities, 1966–67*

Field of course	Courses taught by teachers with "other" activities [a]		Percent of courses, by teacher's hours per week spent in other junior college activities [a]						
	Number	Percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	13,878	59	100	8	70	20	2	[b]	[b]
Agriculture	245	59	100	8	65	22	4	1	------
Anthropology	119	62	100	7	53	33	5	2	------
Biological sciences	2,027	60	100	4	76	20	[c]	------	------
Education	91	54	100	23	38	31	2	6	------
Engineering	545	61	100	10	78	12	------	------	------
Health fields	129	45	100	5	79	16	------	------	------
Home economics	[d] 50	100	------	------	------	------	------	------	------
Library science [e]	------	------	------	------	------	------	------	------	------
Mathematics	2,913	52	100	12	71	16	1	------	------
Physical sciences:									
Physical sciences, general	217	55	100	7	79	11	3	------	------
Chemistry	1,292	64	100	8	68	20	3	1	------
Earth sciences	204	54	100	5	81	14	------	------	------
Physics	812	65	100	4	82	13	1	------	------
Other physical sciences	100	62	100	------	82	18	------	------	------
Psychology	974	66	100	7	48	30	11	4	------
Science, general	[d] 45	78	------	------	------	------	------	------	------
Social sciences	2,040	63	100	9	54	32	4	[b]	1
Technology	1,696	56	100	5	81	13	1	------	------
Interdisciplines	[d] 11	78	------	------	------	------	------	------	------
Other disciplines	368	69	100	10	69	20	1	------	------

[a] Courses taught by full-time teachers who reported time spent in "other" junior college activities; e.g., seminars, background reading, committee work, legislative liaison, supervision of hobby clubs, etc.

[b] Less than 0.5 percent.

[c] No time reported in other junior college activities.

[d] Percent detail not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–18a. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent in professional activities outside the junior college position, 1966–67*

Field of course	Courses taught by teachers with "other" activities [a]		Percent of courses, by hours per week in "outside" professional activities						
	Number	Percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	21,218	90	100	51	29	16	3	1	[b]
Agriculture	384	93	100	53	33	11	1	------	2
Anthropology	189	99	100	44	28	16	8	3	1
Biological sciences	2,750	82	100	55	28	14	2	1	[b]
Education	119	93	100	56	35	9	------	------	------
Engineering	843	94	100	52	29	15	3	1	------
Health fields	305	100	100	73	16	4	7	------	------
Home economics	[c] 25	50	------	------	------	------	------	------	------
Library science [d]	------	------	------	------	------	------	------	------	------
Mathematics	4,490	81	100	49	29	19	3	[b]	[b]
Physical sciences:									
Physical sciences, general	325	83	100	53	31	10	4	2	------
Chemistry	1,517	75	100	51	34	12	2	1	------
Earth sciences	345	92	100	50	23	23	1	2	1
Physics	906	73	100	45	35	14	6	[b]	[b]
Other physical sciences	184	100	100	59	12	27	2	------	------
Psychology	1,485	100	100	49	27	16	7	[b]	1
Science, general	70	100	100	32	40	24	------	4	------
Social sciences	3,042	94	100	47	31	19	3	[b]	[b]
Technology	3,633	100	100	53	27	15	3	1	1
Interdisciplines	[c] 11	79	------	------	------	------	------	------	------
Other disciplines	595	100	100	60	20	18	1	1	------

[a] Courses taught by full-time teachers who reported time spent in professional activities not connected with employment in junior college.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

[d] No time reported in outside activities.

Note: Percent detail may not add to 100 because of rounding.

Number of courses taught exceeds total shown for some fields in other tables because data here account for each type of outside activity reported; teachers who engaged in two types of activity were counted twice, etc. Duplication is particularly noticeable in the field of technology, where a high proportion of the teachers reported both working toward an advanced degree and engaged in some other employment.

TABLE A–18b. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent working toward an academic degree, 1966–67*

Field of course	Courses taught by teachers working toward academic degree[a]		Percent of courses, by hours per week working toward academic degree						
	Number	Percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	4,650	20	100	32	40	23	4	1	[b]
Agriculture	69	17	100	61	30	9	------	------	------
Anthropology	[c] 39	20	------	------	------	------	------	------	------
Biological sciences	516	15	100	33	46	18	3	------	------
Education	[c] 25	20	------	------	------	------	------	------	------
Engineering	133	15	100	39	30	18	11	2	------
Health fields	71	25	100	45	38	------	17	------	------
Home economics[d]	------	------	------	------	------	------	------	------	------
Library science[d]	------	------	------	------	------	------	------	------	------
Mathematics	1,035	19	100	25	44	29	2	[b]	[b]
Physical sciences:									
Physical sciences, general	68	17	100	58	32	10	------	------	------
Chemistry	281	14	100	43	30	24	------	3	------
Earth sciences	[c] 46	12	------	------	------	------	------	------	------
Physics	193	15	100	35	37	26	------	------	2
Other physical sciences	[c] 12	7	------	------	------	------	------	------	------
Psychology	271	18	100	40	33	16	11	------	------
Science, general	[c] 6	10	------	------	------	------	------	------	------
Social sciences	805	25	100	22	41	28	8	------	1
Technology	964	32	100	35	42	20	2	1	------
Interdisciplines[d]	------	------	------	------	------	------	------	------	------
Other disciplines	116	22	100	48	25	24	------	3	------

[a] Courses taught by full-time teachers who reported working toward a bachelor's or advanced degree concurrent with employment in junior college.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

[d] No time reported in work toward a degree.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–18c. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours in "outside" employment, 1966–67*

Field of course	Courses taught by teachers with "outside" employment [a]		Percent of courses, by hours per week in "outside" employment [b]						
	Number	Percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	5,550	24	100	48	22	23	6	[c]	1
Agriculture	116	28	100	32	29	30	4	------	5
Anthropology	[d] 46	24	------	------	------	------	------	------	------
Biological sciences	538	16	100	62	16	21	1	------	[c]
Education	[d] 27	21	------	------	------	------	------	------	------
Engineering	271	30	100	33	39	23	4	1	------
Health fields	[d] 47	16	------	------	------	------	------	------	------
Home economics [e]	------	------	------	------	------	------	------	------	------
Library science [e]	------	------	------	------	------	------	------	------	------
Mathematics	996	18	100	47	17	27	9	------	------
Physical sciences:									
Physical sciences, general	76	19	100	40	33	14	8	5	------
Chemistry	390	19	100	49	34	11	5	1	------
Earth sciences	128	34	100	49	20	27	4	------	------
Physics	221	18	100	55	24	12	9	------	------
Other physical sciences	106	66	100	45	15	37	3	------	------
Psychology	482	33	100	40	24	22	13	1	------
Science, general	[d] 27	47	------	------	------	------	------	------	------
Social sciences	695	21	100	47	21	28	4	------	------
Technology	1,238	41	100	47	19	24	8	[c]	2
Interdisciplines	[d] 8	57	------	------	------	------	------	------	------
Other disciplines	138	26	100	54	22	21	3	------	------

[a] Courses taught by full-time teachers who reported salaried employment or self-employment concurrent with employment in junior college.

[b] Salaried professional employment outside a teacher's junior college in industry, government, or nonprofit organization or self-employment in professional activities such as consulting, editing, or writing.

[c] Less than 0.5 percent.

[d] Distributions not shown for fields with 50 or fewer courses reported.

[e] No time reported for "outside" employment.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–18d. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and by hours in research at other educational institutions, 1966–67*

Field of course	Courses taught by teachers in research at other institutions [a]		Percent of courses, by hours per week in research at other institutions						
	Number	Percent of total in survey [a]	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	804[b]	3	100	50	32	13	1	------	4
Agriculture	[b] 12	3	------	------	------	------	------	------	------
Anthropology	[b] 5	2	------	------	------	------	------	------	------
Biological sciences	136	4	100	51	45	4	------	------	------
Education [c]	------	------	------	------	------	------	------	------	------
Engineering	[b] 15	2	------	------	------	------	------	------	------
Health fields	[b] 29	10	------	------	------	------	------	------	------
Home economics	[b] 4	8	------	------	------	------	------	------	------
Library science [c]	------	------	------	------	------	------	------	------	------
Mathematics	189	3	100	24	41	31	------	------	4
Physical sciences:									
Physical sciences, general	[b] 19	5	------	------	------	------	------	------	------
Chemistry	78	4	100	63	32	------	------	------	5
Earth sciences	[b] 9	2	------	------	------	------	------	------	------
Physics	[b] 23	2	------	------	------	------	------	------	------
Other physical sciences [c]	------	------	------	------	------	------	------	------	------
Psychology	[b] 17	1	------	------	------	------	------	------	------
Science, general [c]	------	------	------	------	------	------	------	------	------
Social sciences	150	4	100	39	39	22	------	------	------
Technology	92	3	100	70	17	6	------	------	7
Interdisciplines [c]	------	------	------	------	------	------	------	------	------
Other disciplines	[b] 26	5	------	------	------	------	------	------	------

[a] Courses taught by teachers who reported spending time performing research at another educational institution concurrent with employment in junior college. Only 72 of these courses were taught by full-time teachers; one-half were teaching mathematics.

[b] Distributions not shown for fields with 50 or fewer courses reported.

[c] No time reported in research at another institution.

Note: Percent detail may not add to 100 because of rounding. The questionnaire did not provide a definition of research.

TABLE A–18e. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent teaching at other educational institutions, 1966–67*

Field of course	Courses taught by teachers also teaching at other institutions[a]		Percent of courses, by hours per week teaching at other institutions						
	Number	As percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	2,665	11	100	37	47	15	1	[b]	------
Agriculture	[c] 8	2	------	------	------	------	------	------	------
Anthropology	[c] 27	14	------	------	------	------	------	------	------
Biological science	401	12	100	23	52	25	------	------	------
Education	[c] 19	15	------	------	------	------	------	------	------
Engineering	64	7	100	34	47	19	------	------	------
Health fields	[c] 22	8	------	------	------	------	------	------	------
Home economics[d]	------	------	------	------	------	------	------	------	------
Library science[d]	------	------	------	------	------	------	------	------	------
Mathematics	793	14	100	39	46	14	[b]	1	------
Physical sciences:									
Physical sciences, general	51	13	100	31	59	10	------	------	------
Chemistry	177	9	100	28	50	15	5	2	------
Earth sciences	54	14	100	28	33	39	------	------	------
Physics	160	13	100	26	53	17	4	------	------
Other physical sciences	[c] 12	7	------	------	------	------	------	------	------
Psychology	139	9	100	49	47	4	------	------	------
Science, general	[c] 22	38	------	------	------	------	------	------	------
Social sciences	421	13	100	48	47	5	------	------	------
Technology	220	7	100	40	53	7	------	------	------
Interdisciplines[d]	------	------	------	------	------	------	------	------	------
Other disciplines	75	14	100	29	24	47	------	------	------

[a] Courses taught by full-time teachers who reported teaching at other educational institutions concurrent with employment in junior college.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

[d] No time reported in teaching outside the junior college.

Note: Percent detail may not add to 100 because of rounding. See also appendix tables A–19 and A–20 for data on persons teaching at other educational institutions.

TABLE A–18f. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and by hours spent in "other" professional activities outside the junior college position, 1966–67*

Field of course	Courses taught by teachers in "other outside" activities [a]		Percent of courses, by hours per week in "other outside" activities						
	Number	As percent of total in survey	Total	Less than 5	5–9	10–19	20–29	30–39	40 or more
Total	7,642	32	100	71	20	7	1	1	[b]
Agriculture	182	44	100	63	37	------	------	------	------
Anthropology	73	38	100	55	26	7	8	4	------
Biological sciences	1,172	35	100	74	14	7	4	1	------
Education	51	40	100	61	29	10	------	------	------
Engineering	361	40	100	75	18	7	------	------	------
Health fields	138	48	100	86	3	3	8	------	------
Home economics	[c] 21	42	------	------	------	------	------	------	------
Library science [d]									
Mathematics	1,509	27	100	76	17	7	------	[b]	------
Physical sciences:									
Physical sciences, general	110	28	100	66	18	8	3	5	------
Chemistry	592	29	100	61	32	6	1	------	------
Earth sciences	111	29	100	80	10	5	------	5	------
Physics	314	25	100	51	35	8	5	1	------
Other physical sciences	54	34	100	89	------	11	------	------	------
Psychology	574	39	100	58	23	16	2	------	1
Science, general	[c] 17	29	------	------	------	------	------	------	------
Social sciences	986	30	100	68	21	10	1	[b]	------
Technology	1,133	37	100	77	20	3	------	[b]	------
Interdisciplines	[c] 3	21	------	------	------	------	------	------	------
Other disciplines	241	45	100	76	15	8	1	------	------

[a] Courses taught by full-time teachers who reported time spent in "other" professional activities not connected with junior college position; e.g., work with professional societies, educational associations, etc.

[b] Less than 0.5 percent.

[c] Distributions not shown for fields with 50 or fewer courses reported.

[d] No time reported in "other" professional activities.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–19. *Number of courses taught by full-time junior college teachers of science, engineering, and technology also teaching at other educational institutions, by field and by type of "outside" institution, 1966–67*

Field of course	Courses taught by teachers also teaching at other institutions [a]		Percent of courses, by type of "outside" institutions				
	Number	Percent of total in survey	Total	4-year college	High school	Another junior college [b]	Other [c]
Total	2,665	11	100	31	8	17	44
Agriculture	[d] 8	2	--------	--------	--------	--------	--------
Anthropology	[d] 27	14	--------	--------	--------	--------	--------
Biological sciences	401	12	100	32	6	13	49
Education	[d] 19	15	--------	--------	--------	--------	--------
Engineering	64	7	100	16	5	14	65
Health fields	[d] 22	8	--------	--------	--------	--------	--------
Home economics [e]	--------	--------	--------	--------	--------	--------	--------
Library science [e]	--------	--------	--------	--------	--------	--------	--------
Mathematics	793	14	100	30	9	11	50
Physical sciences:							
Physical sciences, general	51	13	100	55	--------	23	22
Chemistry	177	9	100	28	16	33	23
Earth sciences	54	14	100	65	6	20	9
Physics	160	13	100	26	24	20	30
Other physical sciences	[d] 12	7	--------	--------	--------	--------	--------
Psychology	139	9	100	21	3	30	46
Science, general	[d] 22	38	--------	--------	--------	--------	--------
Social sciences	421	13	100	39	4	18	39
Technology	220	7	100	31	--------	8	61
Interdisciplines [e]	--------	--------	--------	--------	--------	--------	--------
Other disciplines	75	14	100	17	24	32	27

[a] Courses taught by full-time teachers who reported teaching at other educational institutions concurrent with employment in junior college.

[b] Includes night school in the same junior college.

[c] Includes 28 (1 percent) taught by teachers who were also teaching in a 4-year college; 34 (1 percent) by those also teaching in a high school; and 127 (5 percent) by those also teaching in another junior college.

[d] Distributions not shown for fields with 50 or fewer courses reported.

[e] No time reported in teaching outside the junior college.

Note: Percent detail may not add to 100 because of rounding.

TABLE A-20. *Salaries at junior colleges of full-time teachers of science, engineering, and technology also teaching at other educational institutions, by type of school, 1966–67*

Junior college salary	Teachers teaching also at other educational institutions		Percent of teachers, by type of educational institution				
	Number	Percent of total in survey [a]	Total	4-year college	High school	Another junior college	Other [b]
Total	1,240	13	100	32	14	17	37
Less than $7,000	132	11	100	[c] 24	28	8	40
$7,000–8,999	329	10	100	[d] 20	[e] 19	[e] 16	45
$9,000–9,999	132	9	100	30	9	17	44
$10,000–10,999	226	17	100	28	10	24	38
$11,000–11,999	157	19	100	35	[e] 6	29	30
$12,000–12,999	145	12	100	56	5	14	25
$13,000 or more	119	39	100	48	7	9	36

[a] Full-time teachers who reported teaching at other educational institutions concurrent with employment in junior college.

[b] For example, elementary schools; excluded are teachers who reported teaching also at a 4-year college, high school, or another junior college, shown in other columns.

[c] Includes 6 (5 percent) who also taught at a third educational institution.

[d] Includes 6 (2 percent) who also taught in a high school.

[e] Includes 7 (2 percent) who also taught at a third educational institution.

Note: These data differ from those in appendix table A–19 because the unit of count here is the teacher; in A–19, unit is the course. Percent detail may not add to 100 because of rounding.

TABLE A-21a. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and number per teacher, 1966–67*

Field of course	Number of courses	Percent of courses, by number of courses taught by teacher						
		Total	One	Two	Three	Four	Five	Six or more
Total	24,849	100	13	26	31	19	10	1
Agriculture	443	100	5	10	24	32	23	6
Anthropology	205	100	6	50	30	6	8	-------
Biological sciences	3,490	100	16	41	31	10	2	-------
Education	132	100	8	37	28	11	16	-------
Engineering	989	100	12	15	28	23	16	6
Health fields	301	100	39	17	26	10	8	-------
Home economics	[a] 50	-------	-------	-------	-------	-------	-------	-------
Library science	[a] 2	-------	-------	-------	-------	-------	-------	-------
Mathematics	5,945	100	6	13	40	27	13	1
Physical sciences:								
Physical sciences, general	417	100	15	32	28	23	2	-------
Chemistry	2,116	100	13	37	31	14	5	-------
Earth sciences	398	100	14	33	28	14	11	-------
Physics	1,309	100	9	24	39	17	9	2
Other physical sciences	168	100	14	14	30	16	26	-------
Psychology	1,603	100	25	34	17	13	11	-------
Science, general	62	100	15	26	35	24	-------	-------
Social sciences	3,473	100	19	35	23	14	9	[b]
Technology	3,197	100	14	18	27	23	15	3
Interdisciplines	[a] 14	-------	-------	-------	-------	-------	-------	-------
Other disciplines	535	100	2	32	27	25	14	-------

[a] Distributions not shown for fields with 50 or fewer courses reported.

[b] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–21b. *Number of courses taught by full-time junior college teachers of science, engineering, and technology, by field and number per teacher, 1966–67*

Field of course	Number of courses	Percent of courses, by number of courses taught by full-time teacher						
		Total	One	Two	Three	Four	Five	Six or more
Total	23,460	100	11	26	32	19	11	1
Agriculture	415	100	5	7	25	33	24	6
Anthropology	191	100	4	49	32	7	8	-------
Biological sciences	3,356	100	15	42	32	9	2	-------
Education	128	100	9	38	26	11	16	-------
Engineering	898	100	7	14	30	24	18	7
Health fields	287	100	36	18	28	10	8	-------
Home economics	[a] 50	-------	-------	-------	-------	-------	-------	-------
Library science	[a] 2	-------	-------	-------	-------	-------	-------	-------
Mathematics	5,560	100	3	12	41	29	14	1
Physical sciences:								
Physical sciences, general	391	100	13	34	28	23	2	-------
Chemistry	2,033	100	11	38	32	14	5	-------
Earth sciences	377	100	11	33	30	14	12	-------
Physics	1,248	100	6	24	41	18	9	2
Other physical sciences	161	100	10	15	32	16	27	-------
Psychology	1,467	100	24	32	18	13	13	1
Science, general	58	100	9	28	38	25	-------	-------
Social sciences	3,245	100	17	36	24	14	9	[b]
Technology	3,048	100	12	17	28	24	16	3
Interdisciplines	[a] 14	-------	-------	-------	-------	-------	-------	-------
Other disciplines	531	100	2	32	27	25	14	-------

[a] Distributions not shown for fields with 50 or fewer courses reported.

[b] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–22. *Number of courses taught by junior college teachers of science, engineering, and technology in one or more than one discipline, by field and by full- or part-time status, 1966–67*

Field of courses	Total number of courses	Courses taught by teachers of one discipline only					Courses taught by teachers of more than one discipline						
		Number of courses	Percent of total	Percent distribution	Status of teachers, in percent		Number of courses	Percent			Percent distribution	Status of teachers, in percent	
					Full time	Part time		Of total	In sciences only [a]	In non-sciences [b]		Full time	Part time
All fields	24,846	12,325	50	100	91	9	12,521	50	45	5	100	97	3
Agriculture	444	351	79	3	92	8	93	21	20	1	1	100	----
Anthropology	206	54	26	[c]	91	9	152	74	71	3	1	94	6
Biological sciences	3,490	953	27	8	90	10	2,537	73	71	2	20	98	2
Education	131	26	20	[c]	100	----	105	80	72	8	1	96	4
Engineering	990	274	28	2	80	20	716	72	71	1	6	95	5
Health fields	302	176	58	1	92	8	126	42	38	4	1	100	----
Home economics	[d] 49	[d] 33	----	[c]	----	----	[d] 16	----	----	----	[c]	----	----
Library science	[d] 2	----	----	----	----	----	[d] 2	----	----	----	[c]	----	----
Mathematics	5,945	4,308	72	35	92	8	1,637	28	27	1	13	97	3
Physical sciences:													
Physical sciences, general	416	80	19	1	89	11	336	81	80	1	3	95	5
Chemistry	2,118	703	33	6	92	8	1,415	67	66	1	11	98	2
Earth sciences	398	200	50	2	91	9	198	50	50	----	2	98	2
Physics	1,310	698	53	6	94	6	612	47	46	1	5	97	3
Other physical sciences	167	73	44	1	90	10	94	56	54	2	1	100	----
Psychology	1,604	1,238	77	10	89	11	366	23	15	8	3	99	1
Science, general	62	[d] 9	15	[c]	----	----	53	85	85	----	[c]	100	----
Social sciences	3,474	1,415	41	11	90	10	2,059	59	51	8	16	96	4
Technology	3,199	1,734	54	14	94	6	1,465	46	43	3	12	97	3
Interdisciplines	[d] 15	----	----	----	----	----	[d] 15	----	----	----	[c]	----	----
Other disciplines	524	----	----	----	----	----	524	100	----	100	4	99	1

[a] The total number of courses taught by teachers of more than one science discipline was 11,004 by full-time teachers, 329 by part-time teachers.

[b] The total number of courses taught by teachers of science and non-science fields was 1,182 by full-time teachers, 6 by part-time teachers.

[c] Less than 0.5 percent.

[d] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding. The attachment to the questionnaire, in appendix B, shows the fields and subfields or disciplines as classified in this study. In all cases the codes ending in zero and four others (101, chemistry; 105, earth sciences; 106, physics; and 107, other physical sciences) were classified as fields. All others were considered subfields or disciplines.

TABLE A–23. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and number of students per class, 1966–67*

Field of course	Number of courses	Percent of courses, by number of students per class [a]					Median class size
		Total	0–29	30–49	50 or more	Other [b]	
Total	24,600	100	60	24	11	5	26
Agriculture	443	100	56	29	12	3	18
Anthropology	198	100	33	45	22	--------	35
Biological sciences	3,461	100	45	27	22	6	28
Education	129	100	57	36	7	--------	25
Engineering	986	100	69	12	10	9	14
Health fields	295	100	35	25	26	14	30
Home economics	[c] 49	--------	--------	--------	--------	--------	--------
Library science	[c] 2	--------	--------	--------	--------	--------	--------
Mathematics	5,851	100	81	15	3	1	18
Physical sciences:							
Physical sciences, general	416	100	42	30	21	7	30
Chemistry	2,111	100	61	21	10	8	20
Earth sciences	390	100	55	27	13	5	25
Physics	1,309	100	71	15	4	10	16
Other physical sciences	168	100	56	28	12	4	25
Psychology	1,588	100	34	46	20	[d]	25
Science, general	58	100	54	34	9	3	22
Social sciences	3,442	100	45	42	13	--------	30
Technology	3,167	100	65	14	9	12	15
Interdisciplines	[c] 15	--------	--------	--------	--------	--------	--------
Other disciplines	522	100	56	27	11	6	23

[a] Computed by assuming a class was 3 hours of teaching per week; thus, number of students in course, divided by one-third of teaching hours. For example, 6 hours per week spent in teaching one course to 60 students yields a class size of 30—assumed to be two sections of one course.

[b] Laboratory courses only, not included in the computation of median class size.

[c] Distributions not shown for fields with 50 or fewer courses reported.

[d] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–24. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and transfer credit status, 1966–67*

Field of course	Number of courses	Percent of courses, by transfer credit status			
		Total	For transfer credit	Not for transfer credit	Other courses [a]
Total	24,860	100	78	21	1
Agriculture	444	100	70	27	3
Anthropology	206	100	99	---	1
Biological sciences	3,491	100	92	7	1
Education	132	100	84	14	2
Engineering	992	100	73	24	3
Health fields	301	100	40	60	---
Home economics	[b] 49	---	---	---	---
Library science	[b] 2	---	---	---	---
Mathematics	5,947	100	76	23	1
Physical sciences:					
Physical sciences, general	417	100	91	8	1
Chemistry	2,117	100	91	8	1
Earth sciences	397	100	99	1	---
Physics	1,309	100	86	13	1
Other physical sciences	168	100	69	31	---
Psychology	1,603	100	90	10	[c]
Science, general	63	100	92	8	---
Social sciences	3,474	100	94	5	1
Technology	3,199	100	32	67	1
Interdisciplines	[b] 14	---	---	---	---
Other disciplines	535	100	79	17	4

[a] Includes remedial courses.

[b] Distributions not shown for fields with 50 or fewer courses reported.

[c] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–25. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's appraisal of textbooks, 1966–67*

Field of course	Number of appraisals	Percent distribution, teacher's appraisal of textbooks used					Number of courses with no textbooks
		Total	Satisfactory	Too advanced	Too elementary	Other	
Total [a]	25,844	100	77	5	5	13	521
Agriculture	385	100	82	3	5	10	33
Anthropology	278	100	69	6	2	23	4
Biological sciences	3,720	100	73	4	8	15	83
Education	93	100	76	12	10	2	5
Engineering	1,042	100	86	5	1	8	29
Health fields	300	100	80	3	7	10	25
Home economics	[b] 39	---	---	---	---	---	6
Library science	[b] 2	---	---	---	---	---	---
Mathematics	5,715	100	79	3	5	13	54
Physical sciences:							
Physical sciences, general	372	100	72	12	2	14	8
Chemistry	2,372	100	75	5	7	13	21
Earth sciences	464	100	83	3	4	10	10
Physics	1,295	100	78	5	5	12	37
Other physical sciences	165	100	76	7	4	13	6
Psychology	1,779	100	75	6	5	14	55
Science, general	64	100	61	11	5	23	---
Social sciences	4,013	100	80	5	3	12	38
Technology	3,261	100	73	6	6	15	91
Interdisciplines	[b] 10	---	---	---	---	---	---
Other disciplines	475	100	85	4	5	6	16

[a] The estimates show 22,189 courses for which books were cited and appraised (no report for 2,151 courses and no text used for 521 courses). Two books per course were appraised for 3,655 courses (estimated).

[b] Distributions not shown for fields with 50 or fewer courses reported.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–26. *Salaries of full-time junior college teachers of science, engineering, and technology, by region and State, 1966–67*

Region and State	Number of teachers	Percent of teachers, by junior college salary [a]											Median salary
		Total	Less than $5,000	$5,000-5,999	$6,000-6,999	$7,000-7,999	$8,000-8,999	$9,000-9,999	$10,000-10,999	$11,000-11,999	$12,000-13,999	$14,000 or more	
U. S. total	9,675	100	3	2	9	17	17	14	14	9	12	3	$ 9,140
North Atlantic	1,848	100	3	2	8	20	21	17	14	7	6	2	8,835
Connecticut	100	100	----	----	10	18	28	12	29	3	----	----	8,790
Delaware	[b] 15	----	----	----	----	----	----	----	----	----	----	----	--------
Maine	[b] 9	----	----	----	----	----	----	----	----	----	----	----	--------
Maryland	130	100	----	4	11	15	9	23	18	14	6	----	9,480
Massachusetts	223	100	5	----	14	41	19	14	5	1	1	----	7,760
New Hampshire	[b] 28	----	----	----	----	----	----	----	----	----	----	----	--------
New Jersey	60	100	8	----	13	21	23	12	5	18	----	----	8,286
New York	916	100	4	2	5	12	21	16	16	10	10	4	9,048
Pennsylvania	301	100	2	3	7	27	25	15	13	2	4	2	8,440
Rhode Island	[b] 30	----	----	----	----	----	----	----	----	----	----	----	--------
Vermont	[b] 36	----	----	----	----	----	----	----	----	----	----	----	--------
Great Lakes and Plains	2,141	100	4	1	8	20	19	18	13	6	8	3	8,890
Illinois	527	100	5	2	7	15	11	15	15	9	14	7	9,704
Indiana	[b] 10	----	----	----	----	----	----	----	----	----	----	----	--------
Iowa	165	100	3	----	12	25	24	23	8	2	3	----	8,420
Kansas	145	100	4	1	17	40	38	----	----	----	----	----	7,700
Michigan	548	100	3	1	7	15	16	15	20	9	10	4	9,530
Minnesota	133	100	2	----	2	21	20	27	17	6	5	----	9,190
Missouri	266	100	3	6	11	18	22	22	8	3	7	----	8,550
Nebraska	[b] 24	----	----	----	----	----	----	----	----	----	----	----	--------
North Dakota	80	100	7	----	10	38	28	17	----	----	----	----	7,870
Ohio	143	100	5	----	----	30	15	38	6	----	5	1	9,000
South Dakota	[b] 5	----	----	----	----	----	----	----	----	----	----	----	--------
Wisconsin	95	100	3	----	----	11	23	25	16	8	14	----	9,520
Southeast	1,615	100	2	7	21	23	19	11	9	4	3	1	7,870
Alabama	84	100	3	5	17	18	26	18	13	----	----	----	8,270
Arkansas	[b] 40	----	----	----	----	----	----	----	----	----	----	----	--------
Florida	609	100	1	1	12	20	25	16	13	5	6	1	8,640
Georgia	260	100	----	1	12	34	15	5	16	6	7	4	8,200
Kentucky	[b] 48	----	----	----	----	----	----	----	----	----	----	----	--------
Louisiana	[b] 8	----	----	----	----	----	----	----	----	----	----	----	--------
Mississippi	159	100	4	28	48	19	1	----	----	----	----	----	6,380
North Carolina	160	100	6	7	26	23	24	14	----	----	----	----	7,480
South Carolina	[b] 31	----	----	----	----	----	----	----	----	----	----	----	--------
Tennessee	[b] 23	----	----	----	----	----	----	----	----	----	----	----	--------
Virginia	169	100	2	3	37	29	15	8	----	6	----	----	7,280
West Virginia	[b] 24	----	----	----	----	----	----	----	----	----	----	----	--------
West and Southwest	4,071	100	2	2	6	10	13	13	16	12	21	5	$10,250
Alaska	[b] 7	----	----	----	----	----	----	----	----	----	----	----	--------
Arizona	176	100	----	----	3	2	27	34	26	8	----	----	9,530
California	2,425	100	2	----	1	3	6	10	20	17	33	8	11,432
Colorado	128	100	----	4	23	16	30	20	6	1	----	----	8,256
Hawaii	[b] 26	----	----	----	----	----	----	----	----	----	----	----	--------
Idaho	75	100	----	----	40	4	31	9	1	8	7	----	8,200
Montana	19	----	----	----	----	----	----	----	----	----	----	----	--------
Nevada	[b] 2	----	----	----	----	----	----	----	----	----	----	----	--------
New Mexico	[b] 36	----	----	----	----	----	----	----	----	----	----	----	--------
Oklahoma	108	100	3	----	19	42	24	6	----	----	6	----	7,670
Oregon	162	100	----	2	12	31	10	17	12	3	10	3	8,562
Texas	462	100	2	10	16	30	20	10	6	2	4	[c]	7,730
Utah	[b] 40	----	----	----	----	----	----	----	----	----	----	----	--------
Washington	367	100	2	----	8	11	35	21	14	6	3	[c]	8,800
Wyoming	[b] 38	----	----	----	----	----	----	----	----	----	----	----	--------

[a] Represent 9-10-months salaries generally; some respondents may have reported 12-month salaries.

[b] Distributions not shown for States with fewer than 50 teachers reporting.

[c] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–27. *Salaries and highest degrees of junior college teachers of science, engineering, and technology, 1966–67*

Junior college salary [a]	Number of teachers	Highest degree earned by teacher					
		Total	Doctorate	Profes-sional	Master's	Bache-lor's	Other
		Percent distribution					
Total [b]	9,625	100	100	100	100	100	100
Less than $5,000	101	1	3	1	1	4	--------
$5,000—$6,999	1,170	12	2	12	12	21	16
$7,000—$8,999	3,274	34	11	31	37	37	32
$9,000—$9,999	1,406	15	11	21	15	10	11
$10,000—$10,999	1,328	14	21	11	13	15	22
$11,000—$11,999	823	8	14	8	8	6	2
$12,000—$12,999	747	8	17	6	7	3	7
$13,000—$15,999	765	8	21	10	7	4	10
$16,000 or more	11	[c]	[c]	--------	[b]	--------	--------
		Salary					
Median	--------	$9,190	$11,127	$9,246	$9,053	$7,683	$9,250

[a] Represents 9–10-months salary generally; some respondents may have reported 12-month salary.

[b] Excludes teachers who did not report highest degree and salary.

[c] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A–28. *Additional earnings of junior college teachers of science, engineering, and technology, by geographic region and State, 1966–67*

Region and State	Number of teachers	Percent of teachers, additional earnings					
		Total	Less than $2,000	$2,000–2,999	$3,000–3,999	$4,000–5,999	$6,000 or more
U.S. total	9,726	100	65	18	8	4	5
North Atlantic	1,860	100	67	13	9	6	5
Connecticut	103	100	76	16	8	--------	--------
Delaware	[a] 15	--------	--------	--------	--------	--------	--------
Maine	[a] 10	--------	--------	--------	--------	--------	--------
Maryland	131	100	77	--------	5	3	15
Massachusetts	225	100	77	11	3	9	--------
New Hampshire	[a] 28	--------	--------	--------	--------	--------	--------
New Jersey	63	100	78	--------	--------	22	--------
New York	916	100	67	11	13	6	3
Pennsylvania	302	100	49	29	2	2	18
Rhode Island	[a] 31	--------	--------	--------	--------	--------	--------
Vermont	[a] 36	--------	--------	--------	--------	--------	--------
Great Lakes and Plains	2,140	100	66	18	7	4	5
Illinois	526	100	48	21	7	8	16
Indiana	[a] 10	--------	--------	--------	--------	--------	--------
Iowa	157	100	91	1	5	3	--------
Kansas	146	100	83	8	--------	--------	9
Michigan	548	100	60	27	7	4	2
Minnesota	135	100	95	1	4	--------	--------
Missouri	268	100	75	17	--------	8	--------
Nebraska	[a] 25	--------	--------	--------	--------	--------	--------
North Dakota	80	100	79	17	4	--------	--------
Ohio	144	100	67	21	6	2	4
South Dakota	[a] 5	--------	--------	--------	--------	--------	--------
Wisconsin	96	100	47	11	42	--------	--------
Southeast	1,633	100	76	12	6	2	4
Alabama	86	100	93	7	--------	--------	--------
Arkansas	[a] 40	--------	--------	--------	--------	--------	--------
Florida	611	100	80	12	6	1	1
Georgia	263	100	49	6	20	7	18
Kentucky	[a] 49	--------	--------	--------	--------	--------	--------
Louisiana	[a] 9	--------	--------	--------	--------	--------	--------
Mississippi	159	100	82	15	3	--------	--------
North Carolina	162	100	84	16	--------	--------	--------
South Carolina	[a] 33	--------	--------	--------	--------	--------	--------
Tennessee	[a] 25	--------	--------	--------	--------	--------	--------
Virginia	170	100	70	18	3	8	--------
West Virginia	[a] 26	--------	--------	--------	--------	--------	--------
West and Southwest	4,093	100	59	23	9	4	5
Alaska	[a] 7	--------	--------	--------	--------	--------	--------
Arizona	177	100	38	39	18	2	3
California	2,426	100	51	27	12	5	5
Colorado	130	100	73	15	12	--------	--------
Hawaii	[a] 28	--------	--------	--------	--------	--------	--------
Idaho	76	100	61	18	--------	14	7
Montana	[a] 20	--------	--------	--------	--------	--------	--------
Nevada	[a] 2	--------	--------	--------	--------	--------	--------
New Mexico	[a] 38	--------	--------	--------	--------	--------	--------
Oklahoma	110	100	85	5	5	5	--------

Table A–28 (Continued)

Region and State	Number of teachers	Percent of teachers, additional earnings					
		Total	Less than $2,000	$2,000–2,999	$3,000–3,999	$4,000–5,999	$6,000 or more
Oregon	164	100	67	24	6	--------	3
Texas	463	100	74	12	2	3	9
Utah	[a] 43	--------	--------	--------	--------	--------	--------
Washington	370	100	77	16	2	1	4
Wyoming	[a] 39	--------	--------	--------	--------	--------	--------

[a] Distributions not shown for States with fewer than 50 teachers reporting.
Note: Percent detail may not add to 100 because of rounding.

TABLE A–29. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's appraisal of success, 1966–67*

Field of course	Number of courses	Percent of courses, by teacher's appraisal of success			
		Total	Teach barely adequately	Teach with moderate success	Teach quite successfully
Total	24,680	100	2	37	61
Agriculture	439	100	2	33	65
Anthropology	202	100	2	34	64
Biological sciences	3,467	100	2	36	62
Education	127	100	--------	42	58
Engineering	967	100	2	36	62
Health fields	300	100	--------	33	67
Home economics	[a] 49	--------	--------	--------	--------
Library science	[a] 2	--------	--------	--------	--------
Mathematics	5,939	100	2	39	59
Physical sciences:					
Physical sciences, general	417	100	4	51	45
Chemistry	2,104	100	3	40	57
Earth sciences	396	100	1	27	72
Physics	1,298	100	3	47	50
Other physical sciences	169	100	2	23	75
Psychology	1,591	100	2	27	71
Science, general	62	100	--------	34	66
Social sciences	3,464	100	2	38	60
Technology	3,153	100	4	32	64
Interdisciplines	[a] 14	--------	--------	--------	--------
Other disciplines	520	100	2	37	61

[a] Distributions not shown for fields with 50 or fewer courses reported.
Note: Percent detail may not add to 100 because of rounding.

TABLE A–30. *Number of courses taught by junior college teachers of science, engineering, and technology, by teacher's appraisal of success, satisfaction with teaching, and career aims, 1966–67*

Teacher's appraisal of own success and satisfaction with teaching	Courses taught		Courses taught, no information teacher's career aims		Courses taught, teacher's career aims						
						Percent distribution					
	Total number	Percent, teacher's appraisal	Number of courses	As percent of total	Number of courses	Total	Teaching	Research	Teaching and research	Adminis-tration	Other
Total	24,684	100	18,130	73	6,554	100	43	17	19	15	6
Very dissatisfied	196	1	139	71	57	100	40	7	21	32	------
Dissatisfied	1,019	4	760	74	259	100	27	25	25	16	7
Indifferent	793	3	566	71	227	100	38	8	34	10	10
Satisfied	8,861	36	6,569	74	2,292	100	43	16	15	18	8
Very satisfied	13,815	56	10,096	73	3,719	100	44	18	20	13	5
Teach barely adequately	540	100	379	70	161	100	37	14	25	19	5
Very dissatisfied	[a] 12	2	------	------	[a] 12	------	------	------	------	------	------
Dissatisfied	71	13	62	87	[a] 9	------	------	------	------	------	------
Indifferent	[a] 17	3	14	------	[a] 3	------	------	------	------	------	------
Satisfied	219	41	134	61	85	100	47	3	21	24	5
Very satisfied	221	41	169	76	52	100	33	27	13	21	6
Teach with moderate success	9,044	100z	6,559	72	2,485	100	43	17	20	13	7
Very dissatisfied	[a] 26	[b]	26	------	------	------	------	------	------	------	------
Dissatisfied	487	5	372	76	115	100	24	34	18	16	8
Indifferent	403	5	301	75	102	100	27	6	46	7	14
Satisfied	3,773	42	2,791	74	982	100	40	18	17	16	9
Very satisfied	4,355	48	3,069	70	1,286	100	49	16	19	12	4
Teach quite successfully	14,940	100	11,055	74	3,885	100	43	17	18	16	6
Very dissatisfied	158	1	113	72	[a] 45	------	------	------	------	------	------
Dissatisfied	461	3	326	71	135	100	30	14	32	18	6
Indifferent	359	2	248	69	111	100	48	6	24	14	8
Satisfied	4,816	32	3,597	75	1,219	100	46	16	13	19	6
Very satisfied	9,146	62	6,771	74	2,375	100	41	19	20	14	6
No response as to appraisal	160	100	137	86	[a] 23	------	------	------	------	------	------
Very dissatisfied [b]	------	------	------	------	------	------	------	------	------	------	------
Dissatisfied [b]	------	------	------	------	------	------	------	------	------	------	------
Indifferent	[a] 14	9	3	------	[a] 11	------	------	------	------	------	------
Satisfied	53	33	47	89	[a] 6	------	------	------	------	------	------
Very satisfied	93	58	87	94	[a] 6	------	------	------	------	------	------

[a] Distributions not shown for categories with fewer than 50 courses reported.

[b] Less than 0.5 percent.

[c] None reported in this category.

Note: Percent detail may not add to 100 because of rounding.

TABLE A-31. *Number of courses taught by junior college teachers of science, engineering, and technology, by field and teacher's appraisal of satisfaction with teaching, 1966–67*

Field of course	Courses taught by teachers appraising		Percent of courses, by appraisal of teaching as a career					
	Number	As percent of total in survey	Total	Very dis-satis-fied	Dis-satis-fied	Indif-ferent	Satis-fied	Very satis-fied
Total	10,522	42	100	1	4	3	36	56
Agriculture	131	30	100	1	1	1	47	50
Anthropology	113	55	100	-------	6	-------	22	72
Biological sciences	1,763	50	100	1	5	2	35	57
Education	[a] 37	28	-------	-------	-------	-------	-------	-------
Engineering	379	38	100	1	8	4	42	45
Health fields	160	53	100	2	4	-------	46	48
Home economics	[a] 10	20	-------	-------	-------	-------	-------	-------
Library science [b]	-------	-------	-------	-------	-------	-------	-------	-------
Mathematics	2,071	35	100	[c]	3	2	34	61
Physical sciences:								
Physical sciences, general	204	49	100	-------	-------	-------	31	69
Chemistry	981	46	100	1	7	5	38	49
Earth sciences	174	44	100	-------	2	2	40	56
Physics	534	41	100	1	3	7	38	51
Other physical sciences	51	31	100	-------	-------	4	71	25
Psychology	879	55	100	2	5	3	28	62
Science, general	[a] 23	37	-------	-------	-------	-------	-------	-------
Social sciences	1,715	49	100	1	4	2	36	57
Technology	1,228	38	100	1	3	6	42	48
Interdisciplines	[a] 4	28	-------	-------	-------	-------	-------	-------
Other disciplines	65	12	100	-------	5	-------	41	54

[a] Distributions not shown for fields with 50 or fewer courses reported.

[b] No teacher reported in this field.

[c] Less than 0.5 percent.

Note: Percent detail may not add to 100 because of rounding.

TABLE A-32. *Appraisal of satisfaction with teaching by full-time junior college teachers of science, engineering, and technology, 1966–67*

Junior college salary [a]	Number of teachers	Appraisal of satisfaction with teaching						
		Total	Very dissatisfied	Dissatisfied	Indifferent	Satisfied	Very satisfied	Other [b]
		Precent in salary range						
Total	9,820	100	1	4	3	36	55	1
Less than $5,000	101	100	--------	3	--------	56	41	--------
$5,000—$6,999	1,170	100	1	6	7	41	45	[b]
$7,000—$8,999	3,291	100	1	5	4	38	51	1
$9,000—$9,999	1,406	100	1	6	2	37	54	--------
$10,000—$10,999	1,340	100	[c]	3	2	36	58	1
$11,000—$11,999	826	100	[c]	2	1	28	67	2
$12,000—$12,999	747	100	1	4	2	28	65	1
$13,000—$15,999	765	100	1	1	2	25	71	--------
$16,000 or more	[d] 11	--------	--------	--------	--------	--------	--------	--------
No report	163	100	--------	2	--------	35	56	7
		Percent distribution in appraisal category						
Total [e]	9,607	100	100	100	100	100	100	[d]
Less than $5,000	101	1	--------	1	--------	2	1	--------
$5,000—$6,999	1,165	12	11	16	26	14	10	--------
$7,000—$8,999	3,274	34	56	41	43	37	31	--------
$9,000—$9,999	1,406	15	15	21	8	15	14	--------
$10,000—$10,999	1,329	14	4	9	9	14	15	--------
$11,000—$11,999	813	8	2	4	4	7	10	--------
$12,000—$12,999	743	8	6	6	5	6	9	--------
$13,000—$15,999	765	8	6	2	5	5	10	--------
$16,000 or more	[d] 11	--------	--------	--------	--------	--------	--------	--------
		Salary						
Median	$9,190	--------	$5,690	$7,805	$7,558	$7,936	$9,571	--------

[a] Represents 9–10–month salaries generally; some respondents may have reported 12-month salaries.

[b] Includes those who responded with more than one opinion as to their satisfaction with teaching; e.g., some indicated that they were satisfied with teaching but dissatisfied with their salary.

[c] Less than 0.5 percent.

[d] Distributions not shown for salary levels with 50 or fewer teachers reporting.

[e] Excludes "no report" on salary to permit percent distributions of known salaries only; nonresponse for salaries amounted to less than 2 percent of the total number of teachers who reported their appraisals.

Note: Percent detail may not add to 100 because of rounding.

APPENDIX B

Technical Notes

TABLES

		Page
B–1.	Number of junior colleges and number of junior colleges represented in sample, by State, 1966 and 1965	69
B–2.	Full-time and part-time junior college science faculty teaching in one field or more than one field, by field, 1966	70
B–3.	Number of teachers in universe sample selected from AAJC roster, by field and sampling ratio	70
B–4.	Number and types of response and nonresponse to questionnaires mailed	71
B–5.	Relation of questionnaires mailed to responses received, by field	71
B–6.	Relation of questionnaires mailed to responses received, by region and State	72
B–7.	Number of estimated eligibles and responses and inflation factors, by field	73
B–8.	Approximate standard errors of percentages shown in this report for junior college teachers of science, engineering, and technology	74
B–9.	Approximate standard errors of percentages shown in this report for courses taught in junior colleges	74

Survey Design

The data presented in this report are based on returns from a mail survey conducted in May 1967 among a sample of junior college teachers of science, engineering, and technology. The sample was selected from a roster of teachers in these fields developed in 1965–66 by the American Association of Junior Colleges (AAJC) at the request of the National Science Foundation. To be eligible for the survey, a teacher must have been listed on that roster and must still have been teaching in May 1967 in one of the fields covered in the survey.

This appendix describes the sample design, the procedure used for estimating the universe from the sample, measures of the reliability of estimates, and contains the questionnaire form.

Sampling Frame

The sampling universe was the AAJC roster consisting of 14,200 names of teachers in 692 junior colleges. (See appendix tables B–1 and B–2.) The roster classified teachers in the field that they taught, consisting of 13 identified fields and a residual group. Teachers who taught in more than one field were identified as such.

Sample Design

The sample design provided for the selection of individuals from the 13 strata, representing fields of science, engineering, or technology. One specification was that the sample must be large enough to estimate a characteristic possessed by one-half the population in that field within ±.05 with a confidence level of .95. Within these limits, the minimum sample which would fulfill these requirements was a weighted sample of 3,000 to 3,500. A weighted sample was drawn from each field. Tabulations combining cases from different fields were weighted by the reciprocal of the sampling rate to give unbiased estimates. The sampling frame took into account the problem posed by teachers who taught more than one subject. A teacher was selected according to the first field in which he was listed; the order of priorities was as shown in appendix table B–2.

A sampling interval (K_i) was established for each field, based on a proportion assigned to the stratum. This proportion was determined by the number in the universe for the field in relation to the total number of teachers. Every $K_i{}^{th}$ case or person in a given field was included in the sample. K_i was determined to give a variance of .000625 (S.D. of .025) for characteristics having a true proportion of .50. An allowance of 25 percent was made for nonresponse and inapplicable cases in the computing of the sampling ratios. Thus, $K_i = N_i/500 + .80$. Sampling ratios ranged from 1:5.48 for the largest field (mathematics) to 1:1.16 for the smallest (anthropology).

The sampling ratios shown in appendix table B–3 are based on the actual number of names on the computer tape, which differed slightly from the number given in appendix table B–2. Hence, sampling ratios vary somewhat from ones computed on the basis of the Foundation's table.[1]

Response

On the basis of the data shown in appendix table B–4, one can compute the (a) response to total mail-out of sample; (b) estimated survey universe in sample, based on all persons heard from; and (c) response from estimated survey universe, based on all persons heard from.

	Number	*Percent*
(*a*) *Sample drawn*, by response to mail-out		
Total	4,663	100
1. Number heard from directly or indirectly.	3,531	76
2. Number not heard from	1,132	24

	Number	*Percent*
(*b*) *Survey universe*, based on (*a*)1		
Total	3,419[2]	100
1. In survey universe	2,868	84
2. Not in survey universe	551	16
(*c*) *Response from estimated survey universe*, based on (*b*)1		
Total estimated survey universe.	3,913	100
(In survey universe, 2,868 of the total "heard from" plus 84 percent of 1,244 "not heard from" (1,132 in (*a*)2) plus 112 envelopes returned by Post Office, etc., in (*a*)1).		
1. Portion of estimated survey universe who actually furnished data.	2,540	65
2. Portion of estimated survey universe who did not furnish data (residual).	1,373	35

The 84 percent (of nonrespondents) referred to (*c* above) as being in the survey universe may be an overstatement, as the estimate assumes that the percentage of respondents falling within the universe would be the same for the response and nonresponse groups. The probability is that a greater percentage of the latter fell outside the survey universe, since such teachers would, in all probability, feel less motivated to respond. However, offsetting this overstatement is the fact that the survey came at the end of the academic year, the time of the peak workload for teachers. Questionnaires were undoubtedly put aside for more pressing tasks.

Response by Field

Data in this report reflect a teacher's field or fields of teaching at the time of the survey, May 1967. His field of teaching when he qualified as a person on the roster of junior college teachers was used only for the purpose of drawing a sample and for inflation of the data to obtain an estimate of the universe. It may or may not have been the field in which he was teaching in May 1967 and by which he is identified in the 1967 survey. This qualification should be borne in mind when examining the data on response shown in appendix table B–5. The latter refers to field of teaching in 1966, when the roster was compiled.

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[1] The number drawn in the sample was 4,711. It later turned out that 48 duplicate names had not been eliminated from the tape. Hence, the actual number of teachers in the sample was 4,663. Many of these duplicates were on the roster because teachers taught in more than one institution. Since the roster was composed of lists provided by the junior colleges, a teacher's name could appear on lists from two or more institutions.

[2] 3,531 minus 112 addressees whose envelopes were returned by the Post Office or the colleges stated their addressees were unknown.

Distribution of respondents by field shows that the highest percentage of response within any one field was chemistry, in which 80 percent of the teachers were heard from. Biological sciences came next, with 79 percent, and then earth sciences, 78 percent. The lowest response rate was in agriculture and political science, both with 69 percent.

The above percentages are in terms of total response or total number of persons heard from.In terms of the number of questionnaires filled out or usable returns, the field with the highest percentage was the biological sciences with 66 percent. The lowest percentage was in psychology, with 46 percent submitting usable returns.

Nonresponse

To determine the major reasons for nonresponse, a letter was sent to an 11-percent sample of nonrespondents in October 1967. The results of this mailing are summarized as follows:

Total number of letters mailed	141
Total number of persons heard from as of November 1, 1967	77
(1) Number who indicated they were not teaching in a junior college in May 1967	11
(2) Number who were teaching in a junior college in May 1967	65
but who:	
(a) thought the questionnaire did not apply to them	13
(b) were too busy at the time to complete the questionnaire	34
(c) did not receive the questionnaire	13
(d) did not respond for other reasons	15
(3) Number of envelopes returned by Post Office	1

(Note: Details do not add to total number of persons because some respondents checked more than one reason.)

A majority of persons who were teaching in a junior college in May 1967 and who replied indicated that they were too busy at the time to complete the questionnaire. A number said they had not received the questionnaire or that they thought it did not apply to them.

Other reasons given by nonrespondents for not replying were that they had overlooked or lost the questionnaire or did not think the study would emphasize science. Others thought the questionnaire was too long or that the questions were too personal.

The within-the-universe-ratio to be derived from the followup of nonrespondents—84 percent (65 over 77)—is the same as the ratio (page 66) based on the response to the mailout.

Reliability of Estimates

As in any survey, the results are subject to reporting and processing errors and errors due to nonresponse.

The data reflect two adjustments for each stratum in the sample, that for the estimated universe and for the estimated ineligibles. These data have been imputed from the number of respondents who were not teaching science or technology and the number who returned usable questionnaires. Hence, the data have been proportionately inflated, based on the response for each stratum, by the following equation:

$$\text{Inflation factor} = \text{reciprocal of sampling ratio } x \; \frac{\text{number of estimated eligibles of entire sample}}{\text{number of questionnaires filled out}}$$

The sampling error (or standard error) of a statistic is inversely proportional to the square root of the number of observations in the sample. Thus, as the sample size increases, the standard error decreases. The standard error is primarily a measure of the variability that occurs by chance because only a sample rather than the entire universe is surveyed. As calculated for this report, the standard error also reflects part of the measurement error, but it does not measure any systematic biases in the data. The chances are about two out of three that an estimate from the sample differs from the value which would be obtained from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference is less than twice the standard error and a bout 99 out of 100 that it is less than two and a half times as large.

Relative standard errors of percentages shown in this report can be computed from data in appendix tables B–8 and B–9.

The equation for computing the standard error in estimates of the number of teachers follows:

$$\sigma\ p = \sqrt{\frac{\bar{w}}{N}\ pq\ (1 + V_w^2)}$$

p = percent
q = 100-p
N = base of the percentage (after inflation)
$\bar{w}$ = average weight of sampling rates
V_w = standard deviation of weights divided by the average weight $\left(\frac{\sigma\ \hat{w}}{w}\right)$

Thus, if 4 percent of teachers in private junior colleges hold a professional degree (appendix table A–5),

p = 4
q = 100-p
N = 1,504
$\bar{w}$ = 4.24
$V_w = \frac{1.66}{4.24} = 0.39$
V_w^2 = 0.154

$$\sigma\ p = \sqrt{\bar{w}\ (1 + V_w^2)}\ \sqrt{\frac{pq}{N}}$$

$$\sqrt{\bar{w}\ (1 + V_w^2)} = 2.212$$

$$\sigma\ p = 2.212\ \sqrt{\frac{pq}{N}}$$

$$\sigma\ p = 2.212\ \sqrt{\frac{4 \times 96}{1{,}504}} = 1.1$$

Thus, the 2 σ confidence interval is 4 ± 2.2 and approximate true value is between 1.8 to 6.2 percent.

For approximation of the sampling error, based on estimated number of courses, the equation used was:

$$\sigma\ p = \sqrt{\frac{pq}{\hat{n}}}\ \sqrt{(1 + V_w^2)\ (1 + V_c^2)}$$

where

$\hat{n}$ = number of different sample teachers accounting for the courses in the base of the percentages
p = percent
q = 100-p
V_w = coefficient of variation of the weights
V_c = coefficient of variation of number of courses in a field taught by each teacher

$1 + V_w^2 = 1.15$

$1 + V_c^2 = 1.20$

$$\sqrt{(1 + V_w^2)\ (1 + V_c^2)} = 1.17$$

so that

$$\sigma\ p = 1.17\ \sqrt{\frac{pq}{\hat{n}}}$$

(Note: Although V_c^2 actually varies somewhat from field to field, most of the values are in the neighborhood of $V_c^2 = .2$. To simplify the calculations the approximation .2 was used for V_c^2 in all standard error computations).

To find the sampling error of a given percentage of courses having a certain characteristic, refer to appendix table B–9. In appendix table B–9 interpolate on the line for the appropriate field. For example, if 64 percent of the 983 engineering courses are taught by teachers with a master's degree (appendix table A–7), appendix table B–9 shows that these 983 courses represent 171 teachers ($\hat{n}$). The percentages and numbers given in appendix table B–9 between which the percentage (64) falls are: p=50 and p=75, and the corresponding sampling errors are 4.5 and 3.9 percent. Thus, the 64 percent of the 983 courses or 629 courses has a sampling error of approximately ±4.2 percent, or ±26 courses.

TABLE B–1. *Number of junior colleges and number of junior colleges represented in sample, by State, 1966 and 1965*

State	Number of junior colleges, 1966[a]	Number of junior colleges, 1965[b]	Number of junior colleges represented in sample[c]
Total	834	767	664
Alabama	19	20	3
Alaska	7	7	15
Arizona	6	6	6
Arkansas	7	6	7
California	82	79	74
Colorado	7	6	7
Connecticut	16	15	7
Delaware	1	1	2
District of Columbia	3	3	2
Florida	29	27	26
Georgia	21	18	19
Hawaii	5	1	3
Idaho	5	4	5
Illinois	42	40	40
Indiana	2	2	2
Iowa	22	21	21
Kansas	21	21	20
Kentucky	18	18	15
Louisiana	2	1	1
Maine	2	1	2
Maryland	18	18	14
Massachusetts	29	27	24
Michigan	27	23	23
Minnesota	20	17	14
Mississippi	27	28	23
Missouri	19	20	16
Montana	2	2	2
Nebraska	7	6	2
Nevada	---	---	1
New Hampshire	3	3	4
New Jersey	17	12	8
New Mexico	6	5	5
New York	66	67	50
North Carolina	37	22	18
North Dakota	6	6	6
Ohio	10	10	10
Oklahoma	16	16	14
Oregon	14	12	11
Pennsylvania	45	43	34
Rhode Island	3	3	2
South Carolina	13	6	5
South Dakota	2	2	1
Tennessee	9	7	5
Texas	48	47	36
Utah	3	3	3
Vermont	5	4	3
Virginia	22	23	20
Washington	19	17	17
West Virginia	5	4	3
Wisconsin	14	12	10
Wyoming	5	5	4

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[a] *1967 Junior College Directory.* Washington, D.C.: American Association of Junior Colleges, 1967. (Excludes 4 in Canal Zone, Virgin Islands, and Puerto Rico.)

[b] *1966 Junior College Directory, op. cit.*

[c] The roster from which the sample was drawn includes 692 junior colleges. The *1966 Directory* covers some new ones established later than December 1965 when the Association mailed the questionnaire upon which the roster is based; also, some colleges did not respond to the questionnaire.

TABLE B–2. *Full-time and part-time junior college science faculty teaching in one field or more than one field, by field, 1966*

Field	Number who teach one field only					Number who teach more than one field [a]			
	Total		Full-time	Part-time	No response [b]	Total	Full-time	Part-time	No response [b]
	Percent	Number							
Unduplicated total	100.0	12,678	9,960	2,371	347	1,518	1,342	131	45
Anthropology	.7	88	74	14	0	92	79	10	3
Agriculture	1.7	218	182	25	11	21	20	0	1
Earth sciences	2.9	373	302	67	4	208	187	15	6
Sociology	4.4	562	398	150	14	307	261	38	8
Engineering	4.5	565	402	148	15	323	291	18	14
Physics	4.7	591	496	82	13	453	407	34	12
Economics	5.2	653	505	125	23	91	79	9	3
Political science	6.6	839	688	126	25	164	143	16	5
Chemistry	9.1	1,153	991	131	31	324	285	30	9
Psychology	9.6	1,217	792	405	20	191	161	26	4
Technology	14.5	1,838	1,431	355	52	292	266	23	3
Biological sciences	14.9	1,891	1,627	219	45	191	164	21	6
Mathematics	18.3	2,320	1,812	453	55	527	476	33	18
None of the above [c]	2.9	370	260	71	39	-----	-----	---	--

[a] Data on teachers who were teaching in more than one science field do not add to total because an individual may be counted in more than one other field.

[b] No response as to full- or part-time.

[c] This group consisted of teachers whose institutions either did not indicate their fields of teaching, or entered on the schedule names of fields taught that were not any of the 13 fields listed.

Source: National Science Foundation based on AAJC register of junior college science teachers.

TABLE B–3. *Number of teachers in universe sample selected from AAJC roster, by field and sampling ratio*

Field	Number in universe who teach [a]		Total number in field N_i	Number in universe	Sampling ratio	Number in sample
	only this field	other subjects but assigned this field				
Unduplicated total	-----	---	14,436 [b]	-----	----	4,711 [c]
Anthropology	88	92	180	181	1.16	156
Agriculture	218	21	239	242	1.23	197
Earth sciences	373	208	581	574	1.95	294
Sociology	562	248	810	815	2.38	343
Engineering	565	245	810	909	2.39	381
Physics	591	329	920	935	2.62	357
Economics	653	91	744	742	2.26	329
Political science	839	91	930	860	2.67	322
Chemistry	1,153	200	1,353	1,340	3.52	381
Psychology	1,217	---	-----	1,266	3.23	392
Technology	1,838	---	-----	1,830	4.43	413
Biological sciences	1,891	---	-----	1,955	4.57	428
Mathematics	2,320	---	-----	2,360	5.48	431
None of the above	370	---	-----	427	1.49	287

[a] Data from appendix table B–2.

[b] The total, 14,436, the number of names on the IBM tape used, differs slightly from the total of 14,196 in appendix table B–2 based on a previous compilation.

[c] Includes 48 duplicate names, hence the actual number in the sample was 4,663. NSF had removed some duplicate names from the roster but evidently not all of them. Many of these duplicates were on the roster because teachers taught in more than one institution. Since the roster was composed of lists provided by the junior colleges, a teacher's name could appear on lists from two or more institutions.

TABLE B–4. *Number and types of response and nonresponse to questionnaires mailed*

	Number	Percent
Total number in sample	4,663 [a]	100
Total number in sample heard from, by type of information obtained	3,419	73
Number who completed and returned questionnaire	2,540	54
Number who were still teaching but who did not complete and return questionnaire	328	7
Number who checked "No" to the screening question or otherwise indicated they were no longer teaching in a junior college or that they were no longer teaching at any level	452 [b]	10
Number deceased	17	[c]
Number teaching in junior colleges but not in survey fields	82	2
Total number in sample not heard from	1,244	27
Number who did not reply in any way	1,132	24
Number of envelopes returned by Post Office, or colleges stated "address unknown"	112	3

[a] The number drawn in the sample was 4,711, including 48 duplicate names or an actual number of 4,663 teachers in the sample. Many of these duplicates were teachers who taught in more than one institution; since the roster was composed of lists provided by the junior colleges, a teacher's name might appear on lists from two or more institutions.

[b] A total of 197 returned questionnaires and checked "No" to screening question; 154 replied or information was obtained from their institutions that they were no longer on faculty; and 101 replied or their institutions stated that they were no longer in the teaching field (retired, etc.).

[c] Less than 0.5 percent.

TABLE B–5. *Relation of questionnaires mailed to responses received, by field*

Field	Questionnaires mailed	Response			No response	Questionnaires mailed	Response			No response
		Total	Usable returns	Other			Total	Usable returns	Other	
Total number	4,663	3,419	2,540	879 [a]	1,244 [b]					
Percent distribution	100	100	100	100	100	100	73	54	19 [a]	27 [b]
Anthropology	3	3	4	3	3	100	75	58	17	25
Agriculture	4	4	5	3	5	100	69	56	13	31
Earth sciences	6	6	7	5	5	100	78	63	15	22
Sociology	7	7	7	8	7	100	73	52	21	27
Engineering	8	8	8	7	9	100	70	54	16	30
Physics	7	8	8	6	7	100	75	60	15	25
Economics	7	7	6	8	8	100	70	49	21	30
Political science	7	6	6	7	8	100	69	50	19	30
Chemistry	8	9	9	8	6	100	80	62	18	19
Psychology	8	8	7	11	9	100	71	46	25	29
Technology	9	9	8	10	10	100	71	50	21	29
Biological sciences	9	10	11	6	7	100	79	66	13	21
Mathematics	9	9	10	8	9	100	74	58	16	26
None of the above	6	6	4	10	7	100	69	37	32	31

[a] Includes 297 who were still teaching but did not fill out forms and 31 who objected to filling them out. The remainder, 551, represents persons identified as not in survey universe: 351 who were no longer teaching in junior colleges; 101 who were no longer in teaching field at all; 82 who were teaching in junior colleges but not in survey fields; and 17 who were deceased. These 551 persons not in survey universe represent 63 percent of the 879 persons.

[b] Includes 66 envelopes returned by Post Office and 46 addressees whose colleges stated they were unknown.

Note: Detail may not add to 100 because of rounding.

Table B–6. *Relation of questionnaires mailed to responses received, by region and State*

Region	Number of questionnaires mailed	Percent distribution			No response	Number of questionnaires mailed	Percent distribution			
		Response					Response			No response
		Total	Number who filled out questionnaire	Other			Total	Number who filled out questionnaire	Other	
U.S. total	4,663	3,419	2,540 [b]	879 [c]	1,244 [d]	100	73	54	19	27
North Atlantic										
Percent of U.S. total	22	20	20	21	29					
Total (1,043)	100	100	100	100	100	100	65	47	18	35
Connecticut	5	6	6	8	2	100	83	55	28	17
Delaware	1	1	1	--	[a]	100	83	83	--	17
District of Columbia	[a]	1	[a]	1	[a]	100	80	40	40	20
Maine	[a]	[a]	1	--	--	100	100	100	--	--
Maryland	9	8	8	9	10	100	61	42	19	39
Massachusetts	15	14	14	13	16	100	61	45	16	39
New Hampshire	2	2	1	3	2	100	67	33	34	33
New Jersey	3	3	4	2	4	100	58	50	8	42
New York	47	46	46	44	50	100	63	47	16	37
Pennsylvania	15	16	15	18	12	100	72	50	22	28
Rhode Island	2	1	2	1	3	100	45	41	4	55
Vermont	1	2	2	1	1	100	79	64	15	21
Great Lakes and Plains										
Percent of U.S. total	23	24	23	28	18					
Total (1,059)	100	100	100	100	100	100	79	56	23	21
Illinois	25	25	24	28	26	100	78	53	25	22
Indiana	1	1	1	2	--	100	100	56	44	--
Iowa	10	10	11	10	8	100	83	61	22	17
Kansas	6	7	7	6	6	100	81	61	20	19
Michigan	23	24	22	28	20	100	81	53	28	19
Minnesota	6	5	6	2	9	100	69	62	7	31
Missouri	9	11	12	7	6	100	87	69	18	13
Nebraska	1	1	1	--	--	100	100	100	--	--
North Dakota	3	3	3	2	1	100	89	68	21	11
Ohio	9	8	8	9	12	100	71	48	23	29
South Dakota	[a]	[a]	[a]	--	[a]	100	50	50	--	50
Wisconsin	7	5	5	6	12	100	60	40	20	40
Southeast										
Percent of U.S. total	17	16	15	17	20					
Total (786)	100	100	100	100	100	100	70	49	21	30
Alabama	9	8	6	14	12	100	62	30	32	38
Arkansas	2	2	2	3	2	100	78	50	28	22
Florida	31	36	35	38	21	100	80	55	25	20
Georgia	14	17	16	18	7	100	85	58	27	15
Kentucky	6	5	5	6	8	100	58	38	20	42
Louisiana	2	1	1	2	3	100	46	23	23	54
Mississippi	13	9	10	4	21	100	48	42	6	52
North Carolina	9	8	10	4	12	100	62	52	10	38
South Carolina	2	2	2	1	2	100	71	57	14	29
Tennessee	2	1	1	1	5	100	35	29	6	65
Virginia	9	10	10	8	6	100	78	59	19	22
West Virginia	1	1	2	1	1	100	80	60	20	20

Table B-6 (Continued)

Region	Percent distribution					Percent distribution				
	Number of questionnaires mailed	Response			No response	Number of questionnaires mailed	Response			No response
		Total	Number who filled out questionnaire	Other			Total	Number who filled out questionnaire	Other	
West and Southwest										
Percent of U.S. total	38	40	42	34	33					
Total (1,775)	100	100	100	100	100	100	76	60	16	24
Alaska	1	[a]	[a]	[a]	1	100	56	44	12	44
Arizona	4	5	5	5	3	100	85	64	21	15
California	56	56	58	48	58	100	76	61	15	24
Colorado	3	3	3	4	2	100	88	65	23	12
Hawaii	1	1	1	3	--	100	100	47	53	--
Idaho	2	2	2	1	2	100	73	60	13	27
Montana	[a]	[a]	[a]	[a]	--	100	100	80	20	--
Nevada	[a]	[a]	[a]	--	[a]	100	33	33	--	67
New Mexico	1	1	1	2	2	100	68	45	23	32
Oklahoma	3	3	3	2	3	100	76	67	9	24
Oregon	4	4	4	5	5	100	74	55	19	26
Texas	15	14	12	19	17	100	72	51	21	28
Utah	1	1	1	2	[a]	100	94	63	31	6
Washington	8	9	9	8	5	100	85	69	16	15
Wyoming	1	1	1	1	2	100	62	52	10	38

[a] Less than 1 percent.

[b] Forty-one of these returns indicated that respondents were still teaching in a junior college but not in the same junior college as shown on the 1965-66 roster of junior college teachers.

[c] Includes 297 who were still teaching but did not fill out forms and 31 who objected to filling them out. The remainder, 551, represents persons identified as not in survey universe: 351 who were no longer teaching in junior colleges; 101 who were no longer in teaching field at all; 82 who were teaching in junior colleges but not in survey fields; and 17 who were deceased. These 551 persons not in survey universe represent 63 percent of the 879 persons. Distribution by region of the 551 persons was: North Atlantic, 22 percent; Great Lakes and Plains, 29 percent; Southeast, 21 percent; and West and Southwest, 28 percent.

[d] Includes 66 envelopes returned by Post Office and 46 addressees whose colleges stated they were unknown.

Note: Detail may not add to 100 because of rounding.

TABLE B–7. *Number of estimated eligibles and responses and inflation factors, by field*

Field of teaching	Sampling ratio [a]	Number of responses	Estimated eligibles	Inflation factor
Total	----	2,540	3,488	----
Anthropology	1.16	87	121	1.61
Agriculture	1.23	113	139	1.51
Earth sciences	1.95	181	238	2.55
Sociology	2.38	171	253	3.52
Engineering	2.39	203	290	3.42
Physics	2.62	205	269	3.43
Economics	2.26	165	243	3.32
Political science	2.67	162	242	3.98
Chemistry	3.52	239	297	4.36
Psychology	3.23	175	277	5.10
Technology	4.43	213	279	5.80
Biological sciences	4.57	276	355	5.90
Mathematics	5.48	247	335	7.45
None of the above	1.49	103	150	2.14

[a] See appendix table B–3 for number in each field in sample.

TABLE B–8. *Approximate standard errors of percentages shown in this report for junior college teachers of science, engineering, and technology*

(Estimated percent)

Base of percent (number of teachers: (N)	2 or 98	5 or 95	10 or 90	25 or 75	50
	Standard error expressed in percentage points				
100	3.1	4.8	6.6	9.6	11.1
500	1.4	2.2	3.0	4.3	5.0
1,000	1.0	1.5	2.1	3.0	3.5
2,500	0.6	1.0	1.3	1.9	3.5
5,000	0.4	0.7	0.9	1.4	2.2
10,000	0.3	0.5	0.7	1.0	1.2

TABLE B–9. *Approximate standard errors of percentages shown in this report for courses taught in junior colleges*

(Estimated percent)

Field of course	Base of percent (number of persons, n)[a]	2 or 98	5 or 95	10 or 90	25 or 75	50
		Standard error expressed in percentage points				
Agriculture	102	1.6	2.5	3.5	5.0	5.8
Anthropology	85	1.8	2.8	3.8	5.5	6.3
Biological sciences	385	.8	1.3	1.8	2.6	3.0
Education	31	2.9	4.6	6.3	9.1	10.5
Engineering	171	1.2	2.0	2.7	3.9	4.5
Health fields	56	2.2	3.4	4.7	6.8	7.8
Home economics	[b]	---	---	---	---	---
Mathematics	437	.8	1.2	1.7	2.4	2.8
Physical sciences, general	108	1.6	2.4	3.4	4.9	5.6
Chemistry	294	1.0	1.5	2.0	3.0	3.4
Earth sciences	100	1.6	2.6	3.5	5.1	5.8
Physics	230	1.1	1.7	2.3	3.3	3.9
Other physical sciences	35	2.8	4.3	5.9	8.6	9.9
Psychology	214	1.1	1.7	2.4	3.5	4.0
Science, general	18	3.9	6.0	8.3	11.9	13.8
Social sciences	583	.7	1.1	1.4	2.1	2.4
Technology	360	.9	1.3	1.8	2.7	3.1
Other disciplines	103	1.6	2.5	3.5	5.0	5.8

[a] Number of persons in sample who were teaching one or more courses in field.

[b] Too few teachers to permit a meaningful estimate of sampling error.

Note: Total exceeds total number in sample since teachers can teach in more than one field.

APPENDIX C

Survey Questionnaire

Your reply will be held in confidence.

BUDGET BUREAU NO. 99-S67006
APPROVAL EXPIRES DECEMBER 31, 1967

STUDY OF JUNIOR COLLEGE TEACHERS OF SCIENCE

(Including Mathematics, Engineering, and Social Science)

Conducted by

Surveys & Research Corporation
1030 Fifteenth St., N.W.
Washington, D. C. 20005

For

Commission on Science Education
American Association for the Advancement of Science

Supported

Under a grant from the
National Science Foundation

Types of Information Requested

Section A. Screening Question
B. Position Assignment and Workload
C. Earned Income
D. Education and Experience
E. Characteristics of Junior College
F. Personal Data

INSTRUCTIONS TO RESPONDENTS

Please fill out this questionnaire and return it in the enclosed stamped envelope to Surveys & Research Corporation. This form is identified only by a number to assure confidential processing of replies. Do not write your name on the form.

A. SCREENING QUESTION

1. Are you teaching at the junior college to which this questionnaire has been addressed? ☐ Yes ☐ No

2. If you checked "No," do you teach at another junior college? ☐ Yes ☐ No

If you checked "No" to Item A.2, please return this questionnaire to Surveys & Research Corporation, 1030 – 15th Street, N.W., Washington, D. C. 20005, without completing the remaining items.

If you checked "Yes" to either Item A.1 or A.2, please answer the remaining items.

B. POSITION ASSIGNMENT AND WORKLOAD

1. Enter below the requested information on each course you are now teaching in the junior college.

Field in which the course is given[a]	Number of students[b]	Number of hours spent per week:[c]				Number of credits for this course	Level of course[e]	Is course designed for transfer credit to a 4-year college? (Yes or No)	What is your appraisal of your success in teaching the course? Use code.[f]	Number of years experience teaching in this field[g]	Number of credits you have earned in this field[h]	
		Classroom teaching	Lab. or shop (including preparation time)	Other[d]	Total						In your undergraduate study	In your graduate study
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

[a] To indicate field, use the code in Attachment 1. If you use one of the codes, "Other (*Specify.*)", write the names of the field opposite the code number.

[b] If you teach more than one section of the same course, include in entry the total number of students in all sections.

[c] If you teach more than one section of the same course, combine time for all sections.

[d] Include student contact time, preparing class material, correcting papers, and grading students.

[e] Indicate level at which course is customarily given, using the following code: F = freshman; S = sophomore; FS = Both freshman and sophomore years; and O = Other.

[f] Use the following code: Believe teach (1) barely adequately, or (2) with moderate success, or (3) quite successfully.

[g] Include high-school teaching experience.

[h] Include total number of credits in the broader field. (Broader fields are generally those listed in Attachment 1 having the last digit as zero. For example, enter credits in Engineering (050) rather than in an engineering specialty – such as Chemical Engineering (051). Exceptions, Chemistry (101), Earth Sciences (105), and Physics (106), are also considered broader fields.

B. POSITION ASSIGNMENT AND WORKLOAD (Continued)

2. Indicate the number of hours per week you currently spend on each of the activities listed under (a) and (b) below. (Make an entry on each line, entering zero for activities in which you do not engage. Note that entry in 2a(1) below should equal the sum of entries in Item 1, col. 6, p. 2.)

a. In professional activities connected with your position at the junior college:	Number of hours
1. Classroom teaching, laboratory or shop (including preparation time), and other related classroom duties (including student contact time, preparing class material, correcting papers, and grading students)	
2. Administrative duties (including departmental administrative work, record keeping, preparing reports, faculty meetings, committee work, coaching athletics, etc.)	
3. Performance and administration of research projects[a]	
4. Other junior college activities (e.g., background reading) *(Specify.)* ______________________________ ______________________________	
b. In professional activities not connected with your position at the junior college:	
5. Teaching at another educational institution *(Check below the type of institution.)* (1) ☐ A 4-year college (3) ☐ Another junior college (2) ☐ A high-school (4) ☐ Other	
6. Research at another educational institution[a]	
7. Salaried employment in a professional capacity in industry, government, or nonprofit organizations	
8. Self-employment, professional activities (e.g., consulting, editing, or writing)	
9. Working toward a bachelor's or advanced degree	
10. Other professional activities *(Specify.)* ______________________________ ______________________________	
11. Sum of a and b (Items 1 – 10)	
[a] Include in Item 9 time spent in work for an advanced degree.	

B. POSITION ASSIGNMENT AND WORKLOAD (Continued)

3. Please indicate the number of hours per week you customarily spend in income-producing activities not included in Item 2 (Enter zero, if none.) ☐

4. List by title and author the texts in current use in the courses you listed in Item 1.

Course/Subject[a]	Textbook used	Author or Editor	If the book is not satisfactory, use the code to indicate reason[b]
(1)	(2)	(3)	(4)
a.			
b.			
c.			
d.			
e.			

[a] Use the code in Attachment 1.

[b] (1) Too elementary; (2) Too advanced; (3) Other *(Specify.)*

B. POSITION ASSIGNMENT AND WORKLOAD (continued)

5. Check the activity and type of employer that most closely approximate your career plans (e.g., next 5 years).

Activity *(Check one.)*	**Employer** *(Check one.)*
(1) ☐ Teaching	(1) ☐ Junior college
(2) ☐ Research	(2) ☐ 4-year college
(3) ☐ Teaching and Research	(3) ☐ Government
(4) ☐ Administration	(4) ☐ Industry
(5) ☐ Other *(Specify.)* ______________	(5) ☐ Other *(Specify.)* ______________

6. How satisfied are you with teaching as a career? *(Check one entry only.)*

(1) ☐ Very dissatisfied

(2) ☐ Dissatisfied

(3) ☐ Indifferent

(4) ☐ Satisfied

(5) ☐ Very satisfied

7. If you checked 1, 2, or 3 in Item 6, indicate by check below the primary factor that influences your point of view.

(1) ☐ Inadequate salary

(2) ☐ Unsatisfactory teaching conditions

(3) ☐ Other *(Specify.)*

____

C. EARNED INCOME

Salary and income information, as other items of information, will be regarded as strictly confidential, not associated with any individual and will be used for statistical purposes only.

8. If you are a full-time junior college teacher, enter information requested in cols. 1, 2, 3, 6, and 7.

If you are a part-time junior college teacher, enter information requested in cols. 4 and 5 only.

(Exclude retirement and disability income, interest, or dividends.)

Estimated earned income for 12-month period, 1966-67 (July '66 - June '67)	Junior college salary				Other earnings	
	Full time		Part time			
	Amount	Number of months employed during year	Amount	Number of months employed during year	Academic year 1966-67	Summer 1966
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$______	$______	______	$______	______	$______	$______

9. If your junior college salary is supplemented by free housing or other income in kind, check here ☐ *(Specify.)*____________________________

____

____

10. If you listed amounts under cols. 6 and 7 in Item 8, check below the type of work you did.

(1) ☐ **Teaching**

(2) ☐ **Research**

(3) ☐ **Other** *(Specify.)*____________________________

11. If you teach as a member of a religious order, check here ☐

12. Enter your academic title or rank at the junior college____________________________

13. Check the box below which most accurately describes your current appointment at the junior college at which you teach.

(1) ☐ **One academic year or less**

(2) ☐ **Two or more years but limited**

(3) ☐ **Unlimited with tenure**

(4) ☐ **An unspecified period without tenure**

(5) ☐ **Visiting lecturer**

(6) ☐ **Other** *(Specify.)*

____

D. EDUCATION AND EXPERIENCE

14. Enter earned degrees and other evidence of training obtained

Degrees awarded and/ or training obtained	Major field[a] (1)	Calendar year (2)	Institution (name, city, state) (3)
a. Doctorate(s) **(Ph.D., Ed. D., D. Sc., etc.)**			
b. Professional degrees **(M.D., L.L.B., E.E., etc.)**			
c. Master's degree **(M.A., M.S., M.Ed., etc.)**			
d. 4-year or 5-year bachelor's degree **(B.A., B.S., etc.)**			
e. Associate degree or award requiring less than 4 years of post-secondary study **(A.A., A.S., etc.)**			
f. Other earned degree(s) *(Specify.)*			
g. Additional study beyond degree(s) earned			
Enter the number of credits earned . . . . ☐ **If you have not received your Ph.D. but have been admitted to candidacy for this degree, check here . . . . . .** ☐	▨	▨	▨
h. Technical training at nondegree-awarding institution			
i. None of the above *(Check col. 1.)*		▨	▨

[a] Use the code in Attachment 1.

15. Since 1960 have you attended any institutes or received fellowships or traineeships that offered additional preparation for your teaching assignment?

(1) ☐ Yes **(2) ☐ No**

If you checked "Yes" please enter, after the name or type of sponsoring organization(s) the major subject(s) studied, date(s) of attendance, and credits earned.

Sponsor	Check if attended		Field(s)[a]	Date(s)	Number of credits earned if any
	During academic year	During summer			
	(1)	(2)	(3)	(4)	(5)
a. National Science Foundation Institute					
b. National Science Foundation In-service Institute					
c. National Defense Education Act Institute					
d. Other university or college workshop or institute					
e. Other university or college extension					
f. State-sponsored grant					
g. Local school system grant					
h. Industrial firm (Honeywell, General Motors, etc.)					
i. Private institutions or foundations (Ford, Carnegie, Guggenheim, etc.)					
j. Fulbright-Hays scholarship					
k. Other U.S. Government agency (*Specify.*) ______________					
l. Other (*Specify.*) ______________					

[a] Use the code in Attachment 1.

D. EDUCATION AND EXPERIENCE (continued)

16. Please list below the information requested on your employment history since 1955, beginning with your current appointment at the junior college.

a. *Full-time junior college teachers only*

List below teaching, research, or other employment since 1955.

Dates (give years only)		Type of work[a]	Teaching level[b]	Field[c]
From	To			
(1)	(2)	(3)	(4)	(5)

[a] To indicate type of work, use the following code: T = teaching; R = research; and O = other *(Specify.)* (If type of work covered, for example, both teaching and research, enter both T and R.)

[b] To indicate teaching level, use the following code: F = freshman; S = sophomore; HS = high school; and O = other.

[c] To indicate field, use the code in Attachment 1.

b. *Part-time junior college teachers only*

List below your teaching experience since 1955.

Dates (give years only)		Teaching level[a]	Field[b]
From	To		
(1)	(2)	(3)	(4)

[a] To indicate teaching level, use the following code: F = freshman; S = sophomore; HS = high school; and O = other.

[b] To indicate field, use the code in Attachment 1.

D. EDUCATION AND EXPERIENCE (continued)

17. *List below publications, awards, research grants, or memberships in professional societies, as requested.*

a. Publications in professional journals (title and journal) and/or books, which you authored or co-authored *(Attach additional page, if necessary.)*

b. Awards, prizes, and/or citations earned

c. Research grants received

d. Memberships held in professional or honorary societies *(Do not use initials.)*

E. CHARACTERISTICS OF JUNIOR COLLEGE

18. Is your junior college public or private?

(1) ☐ **Public** *(Name of administering body)* ______________________________

____

(2) ☐ **Private**

19. Is your junior college administratively a part of another educational unit?

(1) ☐ **Yes** (2) ☐ **No**

20. If answer is "Yes", is it part of:

(1) ☐ **A 4-year college?**

(2) ☐ **A combination of a 2-year high school and 2-year junior college?**

(3) ☐ **A 4-year high school?**

(4) ☐ **Other** *(Specify.)*

____

21. Enrollment and degrees awarded

a. *Check the size that most nearly approximates the number of students enrolled at your junior college.*

(1) ☐ Below 200	(2) ☐ 200 to 499	(3) ☐ 500 to 999	(4) ☐ 1,000 to 2,499	(5) ☐ 2,500 or more

b. *Circle all degrees or certificates that your junior college awards.*

(1) A.A. (2) A.S. (3) A. Ed. (4) Other *(Specify.)*

____

____

ATTACHMENT 1

Classification of Major Fields or Disciplines for Survey Purposes for use in Items B, 1; B, 4; D, 14; D, 15; and D, 16.

Instructions: *When in doubt in the classification of fields, choose the broader terms.* **Use codes 140-148 for all technology fields.**

In responses where it is necessary to "Specify," write in the appropriate column **the specific response opposite the code number.**

Code	Field
010	Agriculture
020	Anthropology
030	Biological Sciences
031	Biology
032	Botany
033	Physiology and Human Anatomy
034	Zoology
035	Other (Specify.)
040	Education
050	Engineering
051	Chemical
052	Electrical
053	Mechanical
054	Other (Specify.)
060	Health Fields
061	Dental Hygiene
062	Nursing
063	Occupational Therapy
064	Physical Therapy
065	Pharmacy
066	Other (Specify.)
070	Home Economics
080	Library Science
090	Mathematics
091	Computers
092	Statistics
093	Other (Specify.)

Code	Field
100	Physical Sciences
101	Chemistry
102	Inorganic
103	Organic
104	Other (Specify.)
105	Earth Sciences
106	Physics
107	Other (Specify.)
110	Psychology
120	Science, General
130	Social Sciences
131	Economics
132	Geography
133	Political Science (government)
134	Sociology
135	Other (Specify.)
140	Technology
141	Architectural Drafting
142	Automotive
143	Construction
144	Data Processing (and computer)
145	Health Fields (medical, dental)
146	Electronics
147	Engineering
148	Other (Specify.)
150	Interdisciplines, e.g., biochemistry, biophysics (Specify.)
160	Other (Specify.)

F. PERSONAL DATA

22. Sex	(1) ☐ Male	(2) ☐ Female
23. Age in years (at nearest birthday) ☐		
24. Marital status: (1) ☐ Single Never married	(2) ☐ Married	(3) ☐ Widowed, Divorced, or Separated
25. Number of dependents *(Exclude yourself.)* ☐		

ATTACHMENT 1

Classification of Major Fields or Disciplines for Survey Purposes for use in Items B, 1; B, 4; D, 14; D, 15; and D, 16.

Instructions: When in doubt in the classification of fields, choose the broader terms. Use codes 140-148 for all technology fields.

In responses where it is necessary to "Specify," write in the appropriate column the specific response opposite the code number.

Code	Field
010	Agriculture
020	Anthropology
030	Biological Sciences
031	Biology
032	Botany
033	Physiology and Human Anatomy
034	Zoology
035	Other (Specify.)
040	Education
050	Engineering
051	Chemical
052	Electrical
053	Mechanical
054	Other (Specify.)
060	Health Fields
061	Dental Hygiene
062	Nursing
063	Occupational Therapy
064	Physical Therapy
065	Pharmacy
066	Other (Specify.)
070	Home Economics
080	Library Science
090	Mathematics
091	Computers
092	Statistics
093	Other (Specify.)

Code	Field
100	Physical Sciences
101	Chemistry
102	Inorganic
103	Organic
104	Other (Specify.)
105	Earth Sciences
106	Physics
107	Other (Specify.)
110	Psychology
120	Science, General
130	Social Sciences
131	Economics
132	Geography
133	Political Science (government)
134	Sociology
135	Other (Specify.)
140	Technology
141	Architectural Drafting
142	Automotive
143	Construction
144	Data Processing (and computer)
145	Health Fields (medical, dental)
146	Electronics
147	Engineering
148	Other (Specify.)
150	Interdisciplines, e.g., biochemistry, biophysics (Specify.)
160	Other (Specify.)

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